How to Combine GEDmatch data into JWorks

Last edited: 17 July 2015

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Key Abbreviations and Terms

DNAGedcom	See Here
FTDNA	Family Tree DNA
GEDmatch	See Here
ICW	In Common With
Tier 1 GEDmatch	Subscription based tools for segment data and triangulation
Triangulation	The process of identifying one or more DNA segments that are in common among at least 3 people (not including close relatives such as parents/children and siblings)

Note: In the fast-paced world of genetic genealogy, these instructions may change. We strive to keep them current, so if you have any issues or find broken links, please let us know at support2@dnagedcom.com.

Introduction

You need to be a Tier 1 member at GEDmatch. The GEDmatch Load Tool on DNAGedcom will combine the *Matching Segment Search* and *Triangulation* outputs from GEDmatch, so you can run various tools on DNAGedcom, including the Automated DNA Segment Analyzer (ADSA).

The step-by-step instructions are very detailed, so you may want to take a quick look at the Quick Guide for Creating a GEDmatch Record on the last page before coming back here.

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What are GEDmatch and DNAGedcom?

Not infrequently, people seem to mix these up! *If you are familiar with both of these,* you can *skip this section.*

- **GEDmatch** (available at www.gedmatch.com) is a 3rd party website, which was created by 2 volunteers, and accepts uploads of autosomal DNA (+ X-chromosome DNA) from 23andMe,[1] FTDNA, and AncestryDNA. In addition to being able to make 'One-to-one' comparisons between pairs of individuals, running the 'One-to-many' tool will give you a list of DNA matches, and these will include individuals from all of the "Big 3" DNA testing companies, even if you have been tested at only one company. Kit numbers on GEDmatch start with either an M, F, or A, which indicates the testing company (23andMe, FTDNA, and AncestryDNA, respectively). Because AncestryDNA doesn't provide any matching segment data (they don't provide a a chromosome browser or any tools to see how you genetically match someone), GEDmatch is the only way to be able to see the matching segment data between you and others from AncestryDNA (as well as individuals who have tested at 23andMe and FTDNA). GEDmatch has a range of utilities and is a fantastic resource for genetic genealogists. The main part of GEDmatch is totally free (although they accept donations to help with server and other costs). More recently, Tier 1 GEDmatch was introduced, which requires a minimum donation of $10 per month. Tier 1 Membership provides additional tools (usually those that put a greater load on their servers than the free tools do), including *Matching Segment Search* and *Triangulation*, and these two tools are currently required for the GEDmatch reports.
- **DNAGedcom** (available at www.dnagedcom.com) is another wonderful 3rd party website for working with your autosomal DNA data, which was the brainchild of Rob Warthen. The tools and documents were originally created for the use of adoptees looking for birth family, but are by no means limited to that purpose. DNAGedcom has a range of data extraction and manipulation tools, including data from 23andMe and FTDNA (and before some of these were available on those websites!) and also from GEDCOMs [a GEDCOM file (.GED) is a universal format for the exchange of family tree data]. The autosomal DNA tools include *ADSA*, *JWorks*, *KWorks* and the *DNAGedcom Client* for AncestryDNA

In order to create your GEDmatch output, you will need to use both GEDmatch (Tier 1) and DNAGedcom.

Tier 1 GEDmatch

Although most of the GEDmatch tools are free, in October 2014, GEDmatch introduced an enhanced Tier 1 membership, which provides additional, server-intensive tools. If you have donated to GEDmatch in the past, you will have access to the Tier 1 tools for "a period of time equal to 1 month for every $10 donated." So basically, Tier 1 GEDmatch membership costs $120 for a full year. But you can take out membership on a

[1] Unlike transfers of 23andMe data to FTDNA, where only tests based on the Version 3 Illumina DNA Sequencer chip are accepted, GEDmatch also accepts uploads of more recent 23andMe tests that used the Version 4 chip.

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month-by-month basis (without any commitments), so you can try it out for a month and then come back again whenever you donate another $10.

You can tell whether you are a Tier 1 member from your GEDmatch Home page, which is the main page that opens when you log-in to www.GEDmatch.com. If you are a Tier 1 Member, this will be shown at the top left (red oval) and the Tier 1 Utilities are in the box at the bottom right (Figure 1). If you aren't a Tier 1 Member, your Home page will instead show you as a Registered User (Figure 2) and the block of Tier 1 Utilities won't be shown.

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Figure 1: GEDmatch Home Page for Tier 1 Member

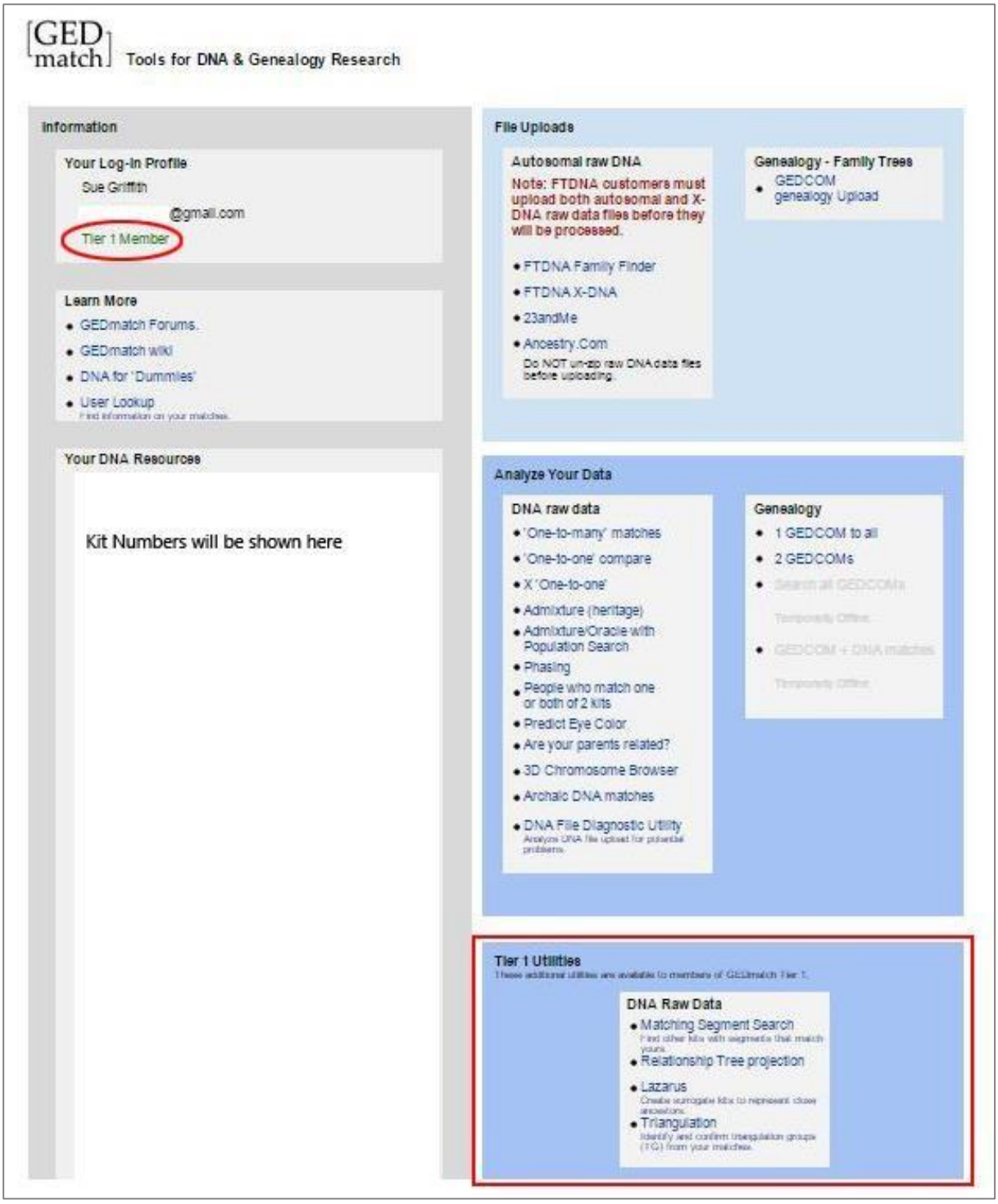

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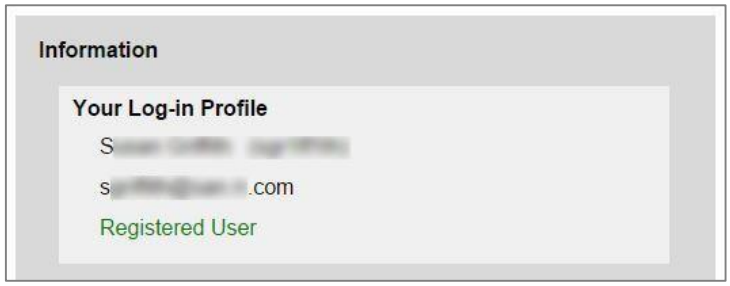
Figure 2: **GEDmatch Home Page if NOT a Tier 1 Member**



Becoming a Tier 1 GEDmatch Member

If you already have Tier 1 Utilities at GEDmatch, you can skip this section.

1. Log-in to www.GEDmatch.com using your email address and password.

   If you aren't registered at GEDmatch, use the same website (www.gedmatch.com), then left-click HERE at the red arrow in Figure 3 to register. You will need to upload your raw DNA data from either AncestryDNA, 23andMe, or FTDNA.

Figure 3: **GEDmatch Log-in or Registration**

   No instructions for uploading your raw DNA data to GEDmatch are provided in this document, but detailed instructions are provided on GEDmatch, although the link for them isn't very obvious. In the Uploads block on the GEDmatch Home page, left-click on the company where you tested, then near the top (in the white area), you will see "Click HERE for detailed upload instructions".

2. Once you have logged in, scroll down to the bottom of the Home page to the Donate section (Figure 4). For a one-off payment, left-click on the "Donate" button, or if you want to set up a regular monthly

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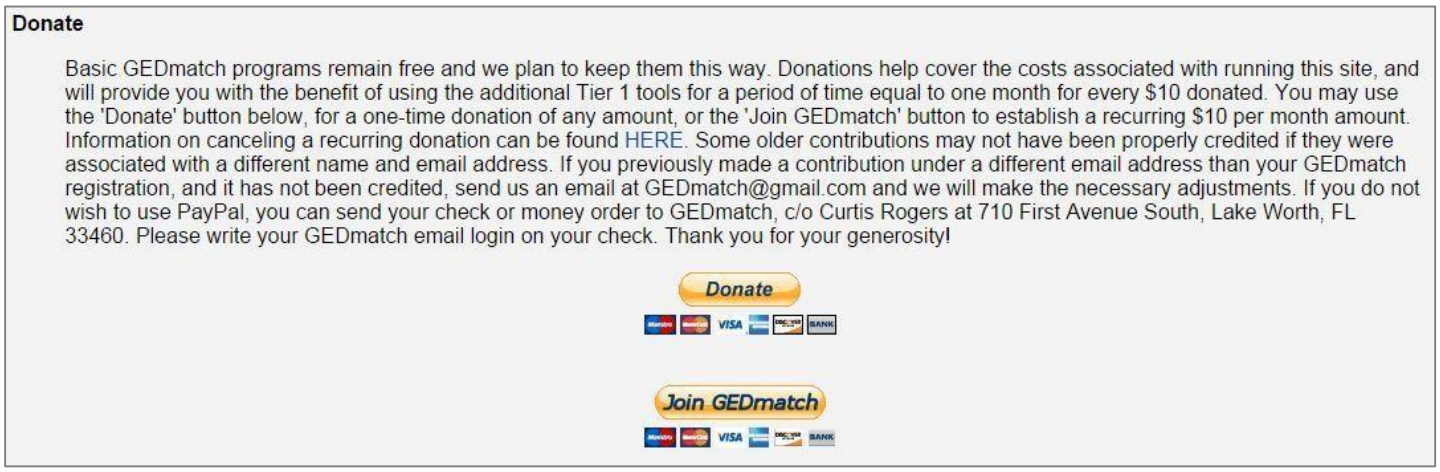
donation to ensure you always have Tier 1 membership, left-click on the "Join GEDmatch" button. Payments are made through Paypal or you can send a check. In order to have access to Tier 1 Utilities, the minimum donation is $10, which will give you access for a month. After payment through Paypal, you should have access to Tier 1 Utilities within minutes – try reloading the page if you don't see them using either the "Reload Page" icon in the browser or press F5 (if using Windows) or [Cmd]-5 (Command button plus "5") if using Mac-OS (Apple). If you have the option of paying via Paypal using the same email address as you use for GEDmatch, use that to minimize the chance that they can't link your Paypal payment to your GEDmatch account.

Figure 4: Donate to GEDmatch



3. Once you can see the Tier 1 tools on your GEDmatch Home page (Figure 1), you are good to go. If you have made an appropriate donation and Tier 1 doesn't show up on your GEDmatch Home page within an hour (don't forget to try reloading the page), send an email to GEDmatch@gmail.com, letting them know your GEDmatch number and email address, as well as the email address used for the Paypal payment, and they will straighten it out. Please remember that GEDmatch (like DNAGedcom) is run by unpaid volunteers who have other commitments.

Step-by-Step Instructions for Creating a GEDmatch Output

Update (14 Apr 2015): A few people have reported issues when using Firefox as their browser. So if you have any problems when following the instructions precisely, try another browser. Google Chrome and Internet Explorer seem to work fine.

1. Log-in to www.dnagedcom.com. If you don't already have a Username, left-click on Register (Figure 5) to create a new account.

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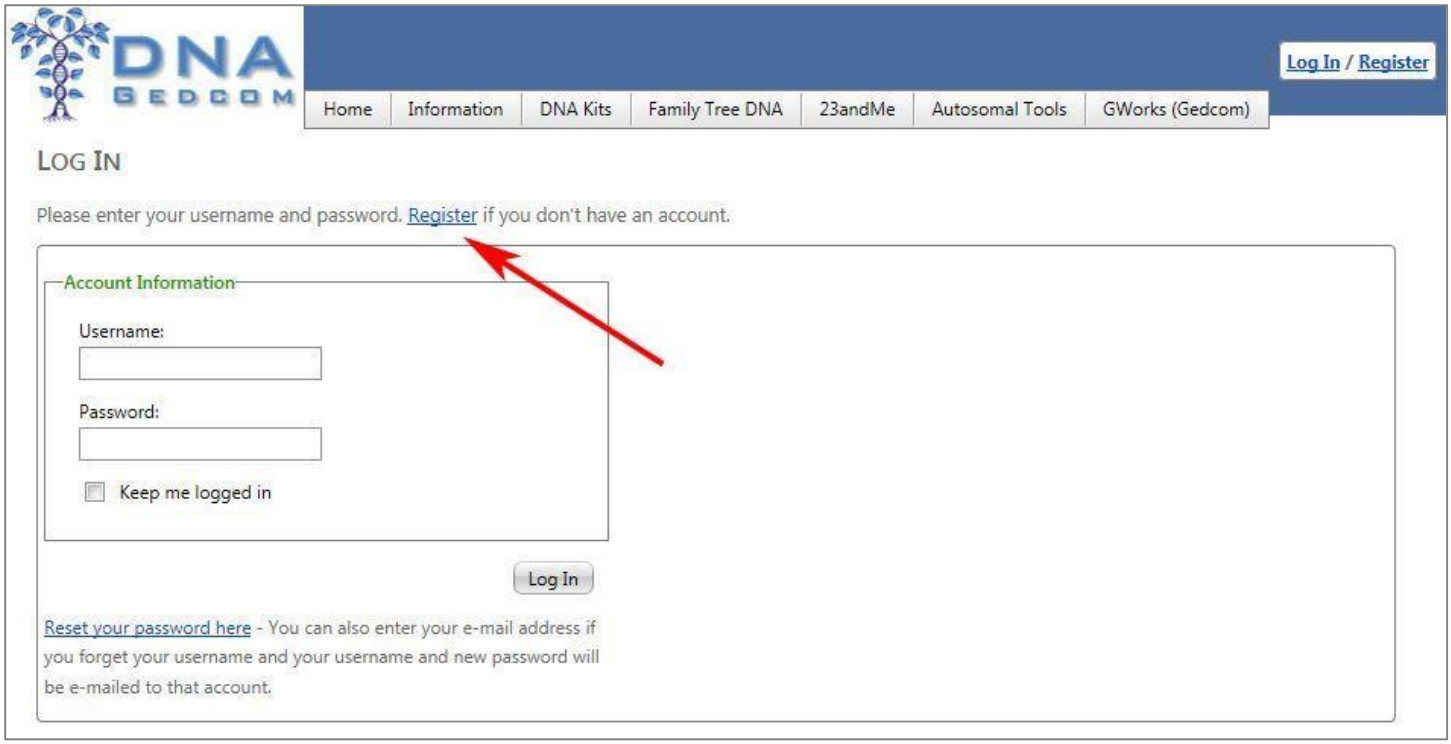
Figure 5: DNAGedcom Log-in Screen



2. Hover over the menu for DNA Kits and left-click on "Upload GedMatch DNA Data" (Figure 6), which opens a screen for uploading your GEDmatch data (Figure 7).

Figure 6: Upload GEDmatch DNA Data Link

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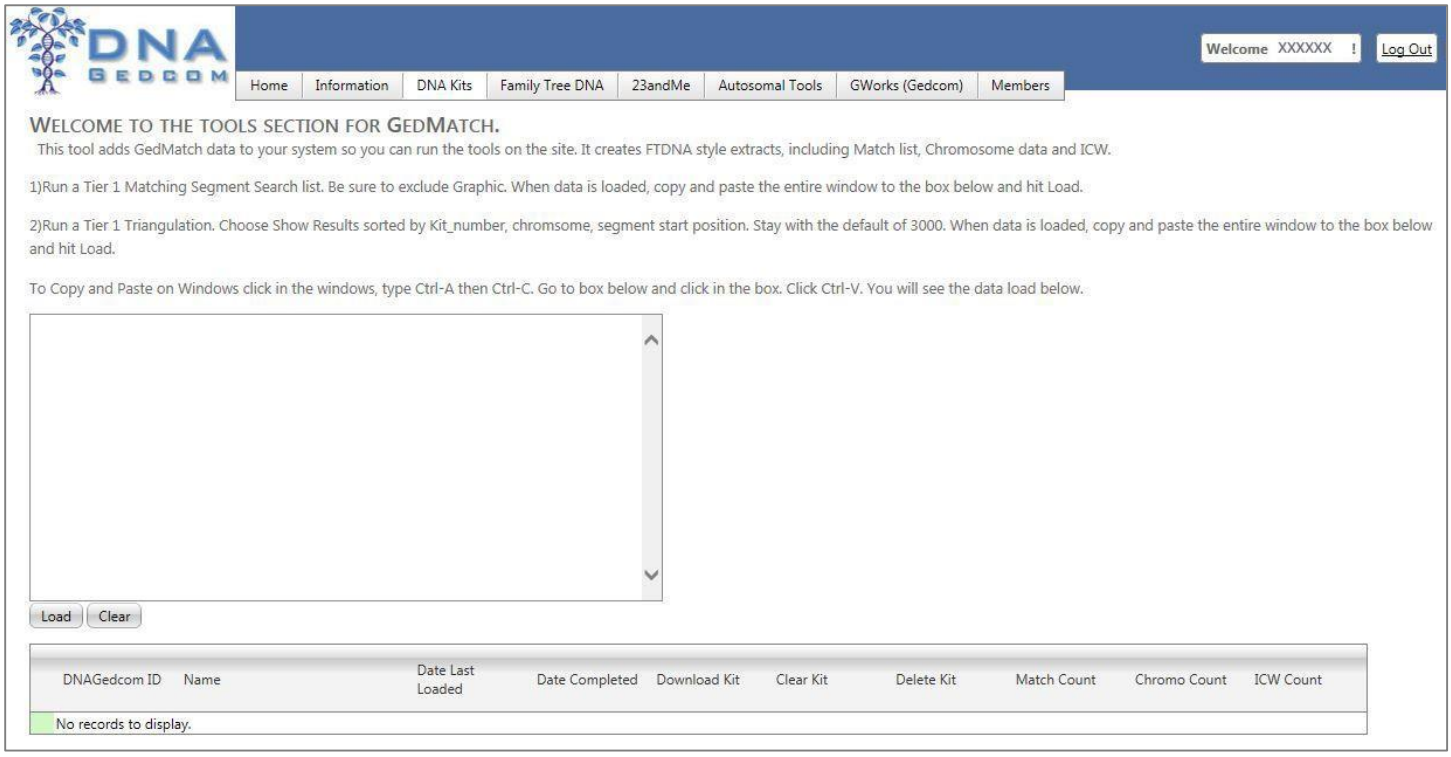
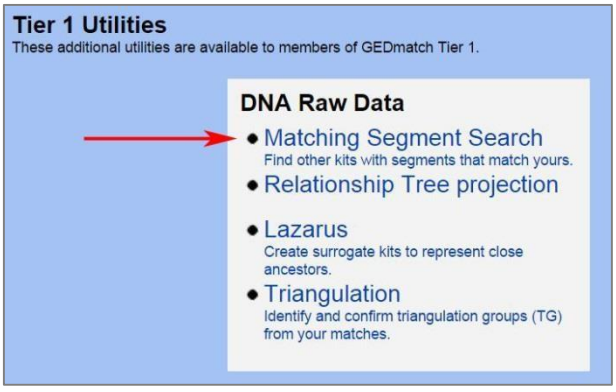
Figure 7: GEDmatch Upload Screen



3. Leave the DNAGedcom screen open and open a new window or tab in your browser. Log-in to GEDmatch (Figure 3), then go to the Tier 1 Utilities block at the bottom right of the main menu screen. Left-click on Matching Segment Search (Figure 8).

Figure 8: GEDmatch Matching Segment Search Link



4. On the GEDmatch DNA Segment Search screen, enter your Kit Number in the top box and at the bottom, *change the default radio button to No* for Show graphic bar for Chromosome (Figure 9). The other boxes can be left blank unless you wish to change the default settings. Left-click on the "Submit" button and then you need a little PATIENCE! It looks as though nothing much is happening, but you may see "Waiting for www4.gedmatch.com" at the bottom left of the browser window, which then disappears; you may see

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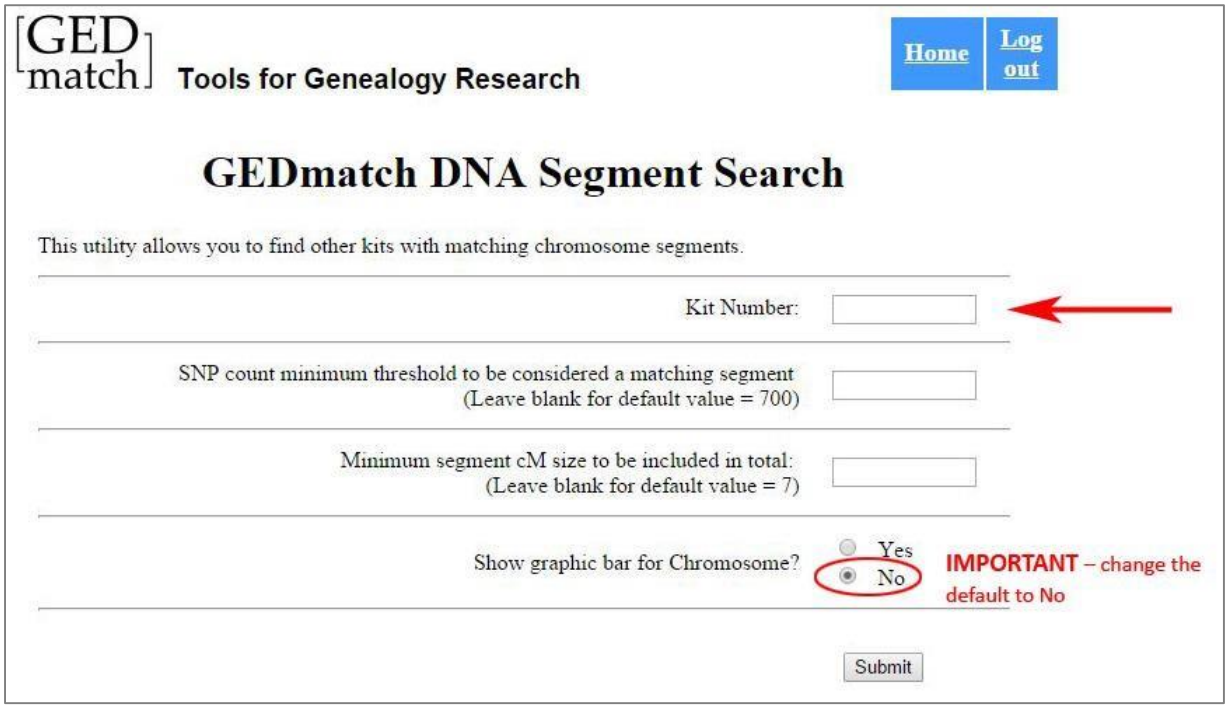
a series of asterisks showing the progress, but you may not. You should expect to wait at least 10 minutes for the output (and often much longer), depending on how busy the server is. Unless there is a message that server capacity has been exceeded, resist the temptation to either click on the Submit button again or try to run in a different tab – this will slow everything down.

Figure 9: GEDmatch Matching Segment Search Screen



5. Figure 10 shows the output once the DNA Segment Search has finished running. This lists your matches ordered by Chromosome and Start Position. [Note: As GEDmatch handles the X-chromosome separately from chromosomes 1-22, this output *excludes* the X-chromosome.] Copy the whole of this page (including everything above the table and everything below the table) as follows. If using Windows, left-click anywhere in the GEDmatch window, then press [Ctrl]+A (Control key plus "A"), which will select All (everything will show as blue), then [Ctrl]+C (Control key plus "C"), which will Copy everything selected. If using Mac-OS (Apple), the equivalent commands are [Cmd]+A (Command key plus “A”), then [Cmd]+C (Command key plus "C"). Each browser also has ways of selecting and copying, which can be used instead.

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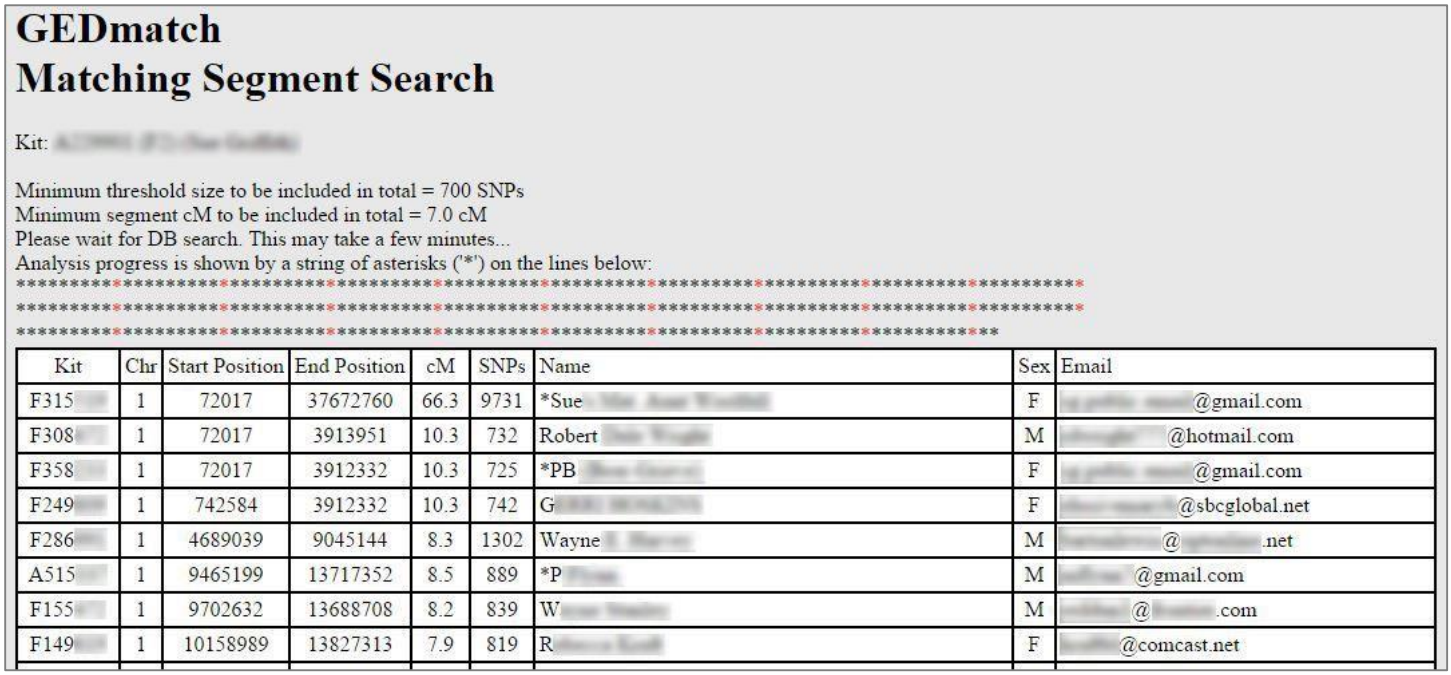
Figure 10: Matching Segment Search Output



GEDmatch
Matching Segment Search

Kit: [redacted]

Minimum threshold size to be included in total = 700 SNPs
Minimum segment cM to be included in total = 7.0 cM
Please wait for DB search. This may take a few minutes...
Analysis progress is shown by a string of asterisks ('*') on the lines below:

Kit	Chr	Start Position	End Position	cM	SNPs	Name	Sex	Email
F315[redacted]	1	72017	37672760	66.3	9731	*Sue[redacted]	F	[redacted]@gmail.com
F308[redacted]	1	72017	3913951	10.3	732	Robert[redacted]	M	[redacted]@hotmail.com
F358[redacted]	1	72017	3912332	10.3	725	*PB[redacted]	F	[redacted]@gmail.com
F249[redacted]	1	742584	3912332	10.3	742	G[redacted]	F	[redacted]@sbcglobal.net
F286[redacted]	1	4689039	9045144	8.3	1302	Wayne[redacted]	M	[redacted].net
A515[redacted]	1	9465199	13717352	8.5	889	*P[redacted]	M	[redacted]@gmail.com
F155[redacted]	1	9702632	13688708	8.2	839	W[redacted]	M	[redacted].com
F149[redacted]	1	10158989	13827313	7.9	819	R[redacted]	F	[redacted]@comcast.net

Hint: A common error made in this step is to copy only the data in the table. As indicated above, the WHOLE PAGE (including the text above the table and the text below the table) is required. Using the Select All command, followed by the Copy command (see above for the quick keys) ensures that everything needed is copied.

6. After copying the Matching Segment Search output from GEDmatch, go back to the DNAGedcom tab, which should have the GEDmatch Upload Screen open (as shown in Figure 7). Left-click in the blank space in the box, then if using Windows, press [Ctrl]+V (Control key plus "V"), or if using Mac-OS (Apple), press [Cmd]+V (Command key plus "V"). This will paste everything from Step 5 into the box, as shown in Figure 11. Then left-click the “Load” button.

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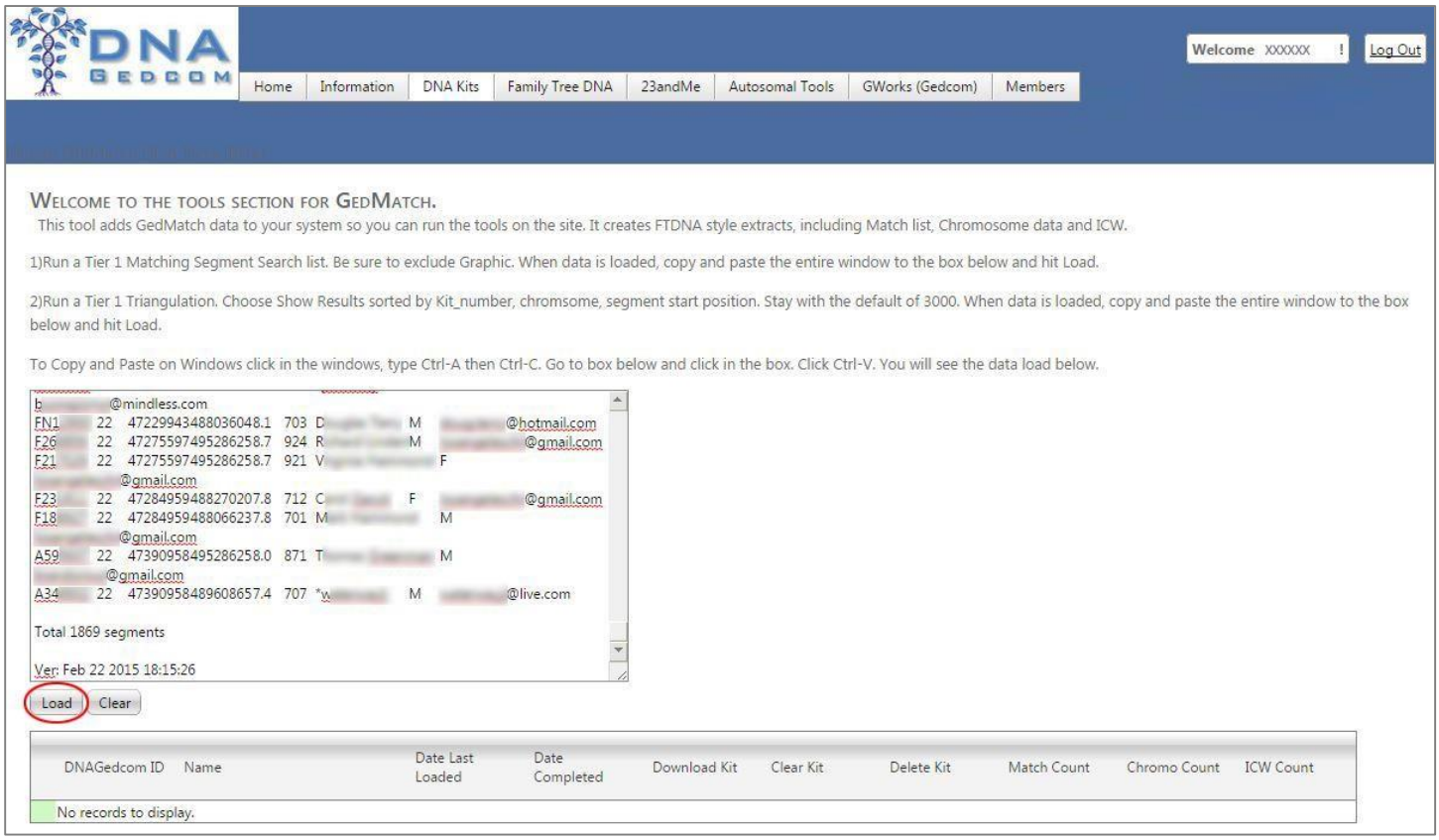
Figure 11: GEDmatch Upload Screen in DNAGedcom after Pasting Matching Segment Search Output



7. It takes <1 minute for the data to load to DNAGedcom – you may see "Waiting for response from dnagedcom.com" at the bottom left of the browser window. After the upload is complete, the box will scroll back so that the top of the pasted data is visible and the kit that was loaded will be in the table at the bottom of the screen, with the Match Count (number of matches from GEDmatch) and Chromo Count (number of matching segments) shown (red rectangle) – see Figure 12. At this stage, ICW Count (at the bottom right) shows 0 if this is the first time you have uploaded a particular kit. [Note: If you are uploading a kit that is already in the system (to add new matches), it will overwrite the previous data. You don't need to delete the old kit.]

   After you have verified that the Match Count and Chromo Count are in the system, left-click the "Clear" button (red oval) and the large box will be empty again.

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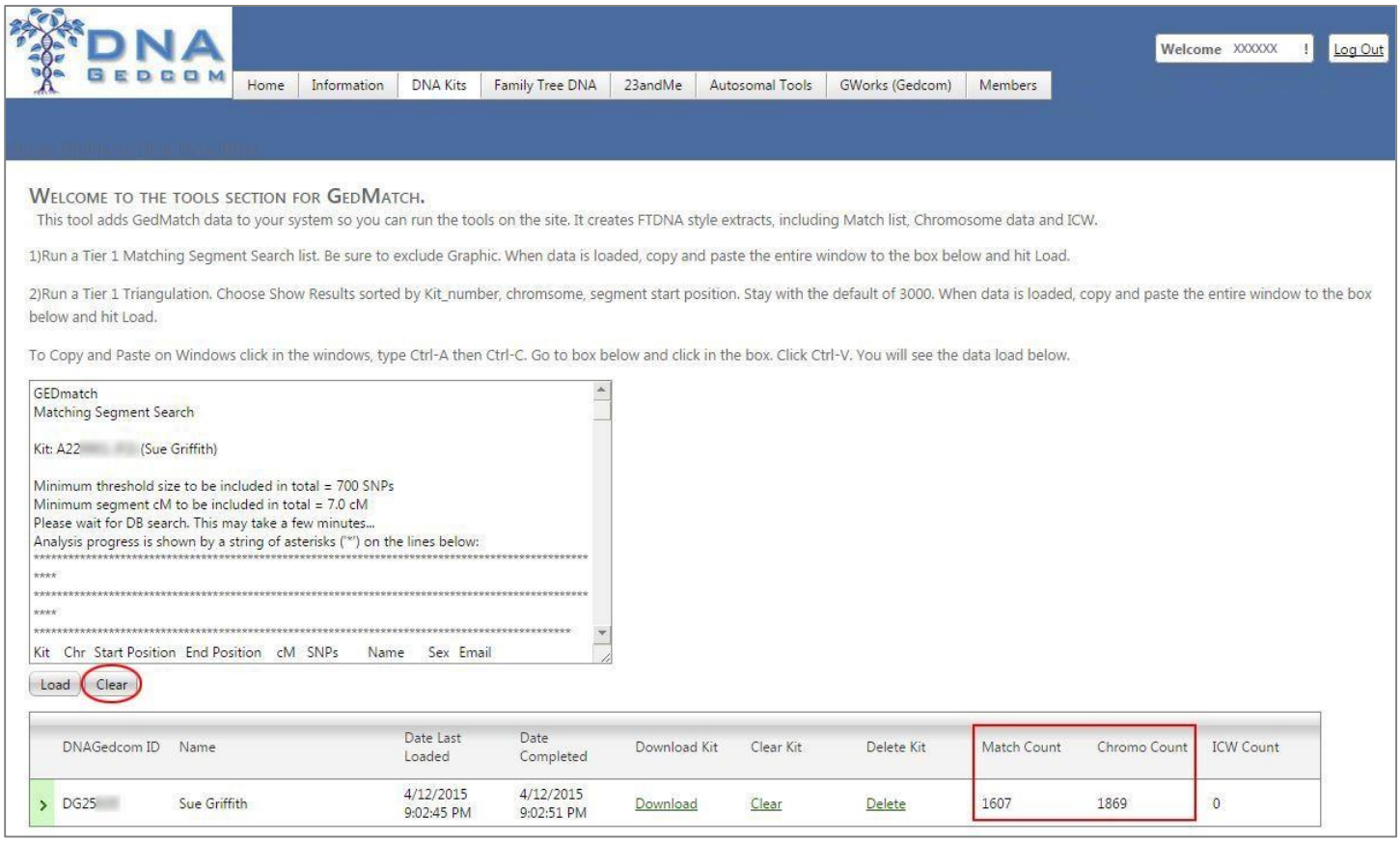
Figure 12: GEDmatch Upload Screen in DNAGedcom after Upload of Matching Segment Search Output



Hint: If the Match Count and Chromo Count don't update automatically, reload the page using either the "Reload Page" icon in the browser or press F5 (if using Windows) or [Cmd]-5 (Command button plus "5") if using Mac-OS (Apple).

8. Go back to the GEDmatch tab. You may need to log-in again due to a time-out. Return to the Tier 1 Utilities block on the Home page, and this time left-click on Triangulation (Figure 13).

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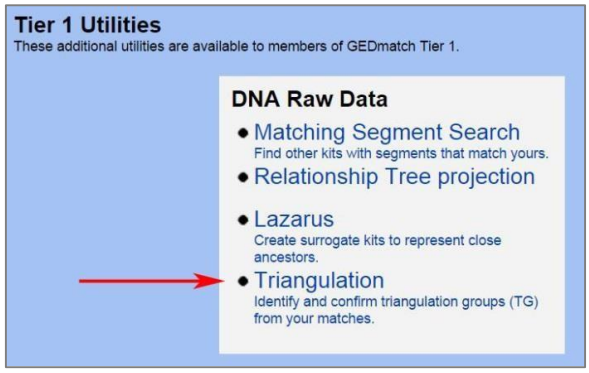
Figure 13: GEDmatch Segment Triangulation Link



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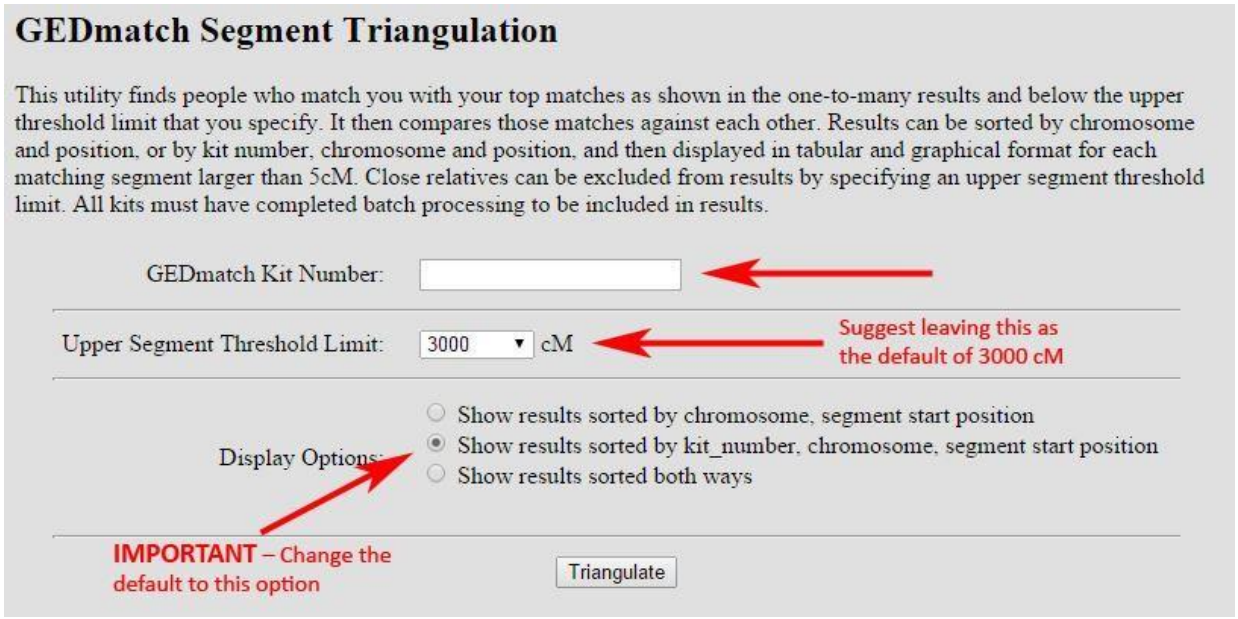
9. This will take you to the Segment Triangulation screen (Figure 14). Insert your GEDmatch Kit Number in the top box. Change the radio button from the default (bottom option) to the middle option (Show results sorted by "kit_number, chromosome, segment start position"). Leave the Upper Segment Threshold Limit at the default of 3000 cM. Then left-click on the "Triangulate" button. You need to be REALLY PATIENT with this tool – even more patient than with the Matching Segment Tool! GEDmatch warns that it can take up to 45 minutes. As with the Matching Segment tool, it looks as though nothing much is happening, but you may see "Waiting for www4.gedmatch.com" at the bottom left of the browser window, which then disappears; you may see a series of asterisks showing the progress, but you may not. Don't click on the Triangulate button again or try to run in a different tab – this will slow everything down.

Figure 14: GEDmatch Segment Triangulation Screen



10. Figure 15 shows the output once the Segment Triangulation tool has finished running. Presumably because of the server requirements to run this, it includes only the closest 400 matches. As in Step 5, copy the whole of this page (including everything above the table and everything below the table) as follows. If using Windows, left-click anywhere in the GEDmatch window, then press [Ctrl]+A (Control key plus "A"), which will select All (everything will show as blue), then [Ctrl]+C (Control key plus "C"), which will Copy every selected. If using Mac-OS, left-click anywhere in the GEDmatch window, then press [Cmd]+A (Command key plus "A"), then [Cmd]+C (Command key plus "C"). Each browser also has ways of selecting and copying, which can be used instead.

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Figure 15: Segment Triangulation Output

GEDmatch Segment Triangulation

All kits shown in columns Kit1 and Kit2 are taken from the closest 400 matches to A22
with a total matching segment count less than 3000 cM.
Matches above 3000 cM (total) are not shown.
Segments shown are larger than 7.0 cM and 500 SNPs.
Processing may take as much as 45 minutes. DO NOT refresh the screen or leave this page during that time.
Progress is shown by a string of 400 asterisks (**) on the lines below:

To put this into a spreadsheet: Ctrl-A, Right-Click/Copy, In Excel: Right-Click/Paste-Special(HTML)
Hover over the kit number to see the name and email.
Hover over the colored segment to see the start and end position of each part.

Triangulated results sorted by Kit Number, Chromosome, Start Position:

Chr	Kit1			Kit2			Start	End	cM
20	A00	Charles	charlie@ .com	A39	B	@hotmail.com	398,704	4,023,934	9.5
20	A00	Charles	charlie@ .com	A50	B	@q.com	398,704	3,972,512	9.4
20	A00	Charles	charlie@ .com	A54	Matt	me@ .com	337,881	4,173,573	10.2
20	A00	Charles	charlie@ .com	A63	*J	linda @twc.com	337,881	4,206,071	10.3
20	A00	Charles	charlie@ .com	A76	Patrick	patrick @hotmail.com	337,881	4,206,071	10.3
20	A00	Charles	charlie@ .com	F29	Barbara	barb @rogers.com	398,704	4,206,071	10.0
20	A00	Charles	charlie@ .com	F30	David	@hotmail.com	337,881	4,233,532	10.4

Hint: A common error made in this step is to copy only the data in the table. As indicated above, the WHOLE PAGE (including the text above the table and the text below the table) is required. Using the Select All command, followed by the Copy command (see above for the quick keys) ensures that everything needed is copied.

11. After copying the Segment Triangulation output from GEDmatch, go back to the DNAGedcom tab, which will have the GEDmatch Upload Screen open. If the large box in the center isn't empty, it means you forgot to left-click the "Clear" button in Step 7, so go ahead and do that now. Left-click in the blank space in the box, then if using Windows, press [Ctrl]+V (Control key plus "V"), or if using Mac-OS, press [Cmd]+V (Command key plus "V"). This will paste everything from Step 10 into the box, as shown in Figure 17. Then left-click the "Load" button.

Figure 16: GEDmatch Upload Screen in DNAGedcom after Pasting Segment Triangulation Output

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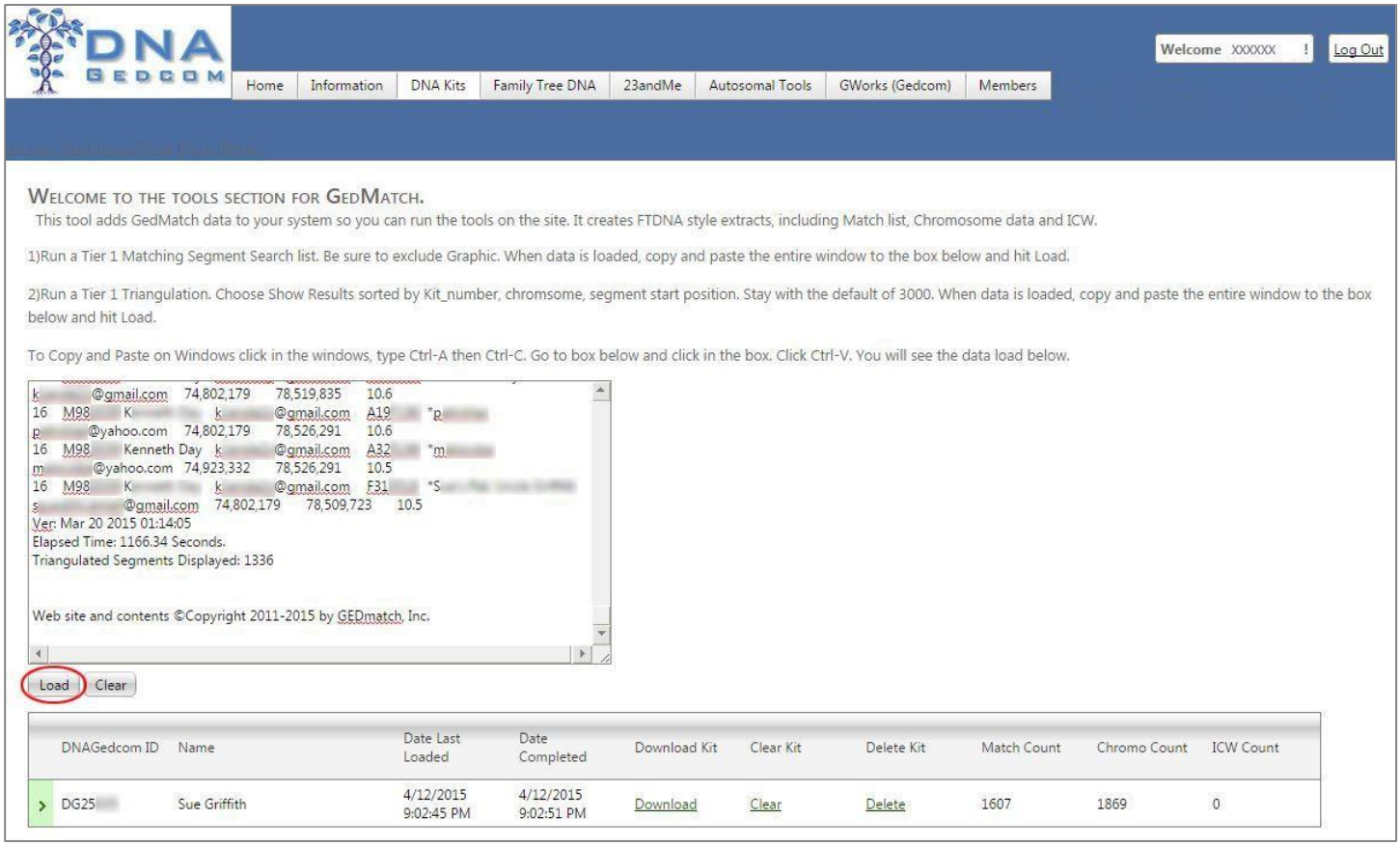

12. It takes <1 minute for the data to load to DNAGedcom – you may see "Waiting for response from dnagedcom.com" at the bottom left of the browser window while it is running. After the upload is complete, the box will scroll back so the top of the pasted data is visible and the record that was loaded will be in the section at the bottom of the screen, this time with the In Common With (ICW) Count shown (red rectangle) – see Figure 17. [Note: If you are uploading a kit that is already in the system (to add new matches), it will overwrite the previous data. You don't need to delete the old kit.]

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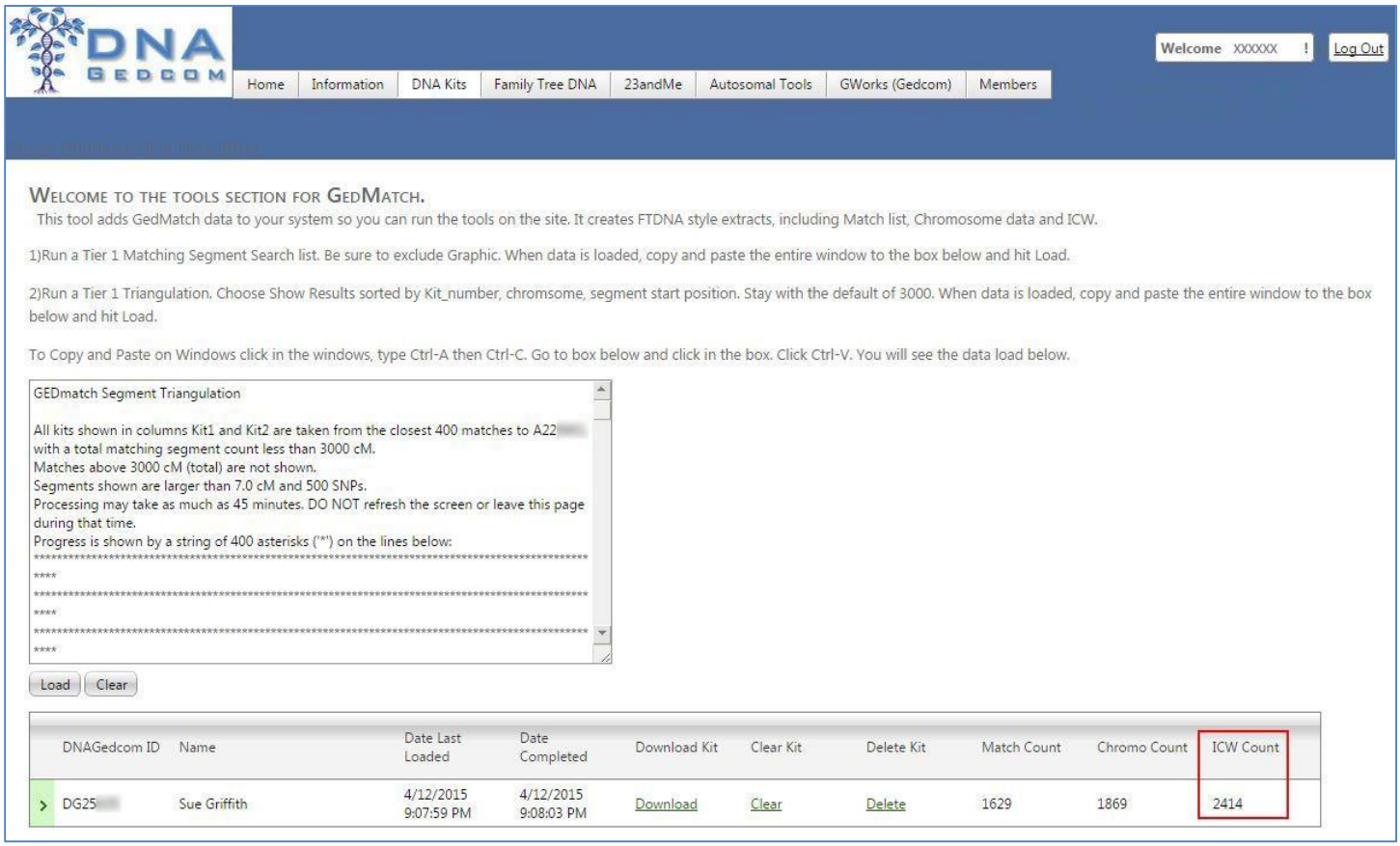
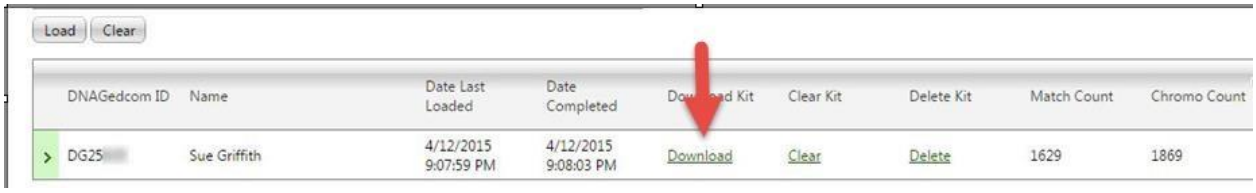
Figure 17: GEDmatch Upload Screen in DNAGedcom after Upload of Segment Triangulation Output



13. In order to use the files generated by the GEDmatch downloader in JWorks or KWorks, download them from the list by clicking on the download link.



Running the GEDmatch Reports in JWorks/KWorks

You can then add the data from these downloaded *.csv files to your Super CB and ICW files. These files will be very similar to the FTDNA csv downloaded files….Matches, ICW and CB csvs.

After adding the data from your new GEDmatch CB and ICW files to your xxxxxx_ChromosomeBrowser.csv and the ICWs to your xxxxxx_ICW.csv, save your new CB and ICW *.csvs. Your combined CB and ICW are now

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ready to run through JWorks. Start with a minimum cMs of 20. If that is successful, you can reduce the minimum cMs. Your output in the xxxxxx_results.xls file from JWorks should look like this:

	A	B	C	D	E	F	H	I	J	K	L	M	N	O	P	Q
							Robert	Todd	Robert	Bob	Donald	Donald	Nichlas	*JAPII	*OA	Mr. Ove
	F	Robert	2	70175163	196603015	103.37		x	x	x	x	x	x	x	x	x
	F	Todd	2	83916013	242697433	148.89	x									
	A521306	Robert	2	169865805	180597420	12	x				x	x	x	x		
	F	Bob	2	170082380	180333683	12.22	x									
	A092115	Donald	2	170782133	180597420	10.3	x		x		x	x	x	x		
	A909751	Donald	2	170782133	180597420	10.3	x		x		x	x	x	x		
	F318318	Nichlas	2	170813564	182195399	11.2	x		x		x	x		x		
	A149380	*JAPII	2	171193685	181041552	10.1	x		x		x	x	x			
	F358422	*OA	2	182013669	198660882	10.6	x									
	F	Mr. Ove	2	182046272	198073679	10.47	x									

When the Match Count and Chromo Count (from Step 7) and the ICW Count (from Step 0) are in the DNAGedcom system, you can also run the ADSA – and you can go back to ADSA whenever you like without having to run everything again from GEDmatch. (You will want to repeat the steps above from time to time to pick up new matches that have been added in GEDmatch, however.)

Specific directions for using the GEDmatch Downloader with the ADSA can be found at: https://www.dnagedcom.com/docs/GEDmatchADSA.pdf

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