MAYFLOWER DNA PROJECT REPORT
FGG Lea Sinclair Filson * GBOA * 9/8/18

DNA is becoming ever more vital in the genealogy field with each passing year. We must be careful not to lose sight of the importance of this addition to our lineal research arsenal in the midst of 2020 plans.

Our Historian General's office works quietly day after day reviewing applications for membership, and the addition of DNA reports to some of those applications is allowing our Historian General to approve or reject papers that may not have had a chance of review in the past. DNA can often provide proof where brick walls exist.

I will outline the tests from Family Tree DNA below, but for men, preferred tests for the most up-to-date results are the Family Finder, Y-500, and mtFull Sequence tests. For women, the Family Finder and mtFull Sequence tests will reveal the most information. The MtFull Sequence is the only test that is in genealogical time. The mtDNA Plus-only test is for deeper ancestry.

I cannot state with enough emphasis the importance of the Family Tree DNA Mayflower Project we have created. Thanks to a huge amount of donated effort and research that the company, Gene by Gene, Ltd. has provided to GSMD, we have identified direct lineage from all of our male Pilgrim ancestors through Y-DNA tests checked against the millions of males in the Family Tree DNA database. This information will allow us to study DNA results with confidence knowing the lines are correct. Without lineal documentation, however, we cannot complete the picture. Without seeing the lineal documentation along with the DNA tests, we could be looking at an applicant who is related to a brother of our male Mayflower Pilgrim.

For those men who have already done a Y-DNA test, it is time to upgrade. Last year we announced that you should upgrade to the new 111 marker test. A short year later, a 500-marker test has just been introduced. The higher the number of markers tested, the more you will learn about yourself and others with similar lineal descent.

The mtDNA test is very useful. Women pass their mitochondrial cells from mother to sons and daughters, but only the daughters can pass it on. In the Mayflower DNA Project, we are identifying mtDNA matches that help to find direct links to our female Mayflower passengers. Additionally, used in conjunction with the Family Finder test we can triangulate with other mtDNA testers to find proof of lineage, which may help to identify descendants without clear documentation. If more members add mtDNA tests to our project, it will produce far better research through the years as the science improves.

We will continue adding the autosomal, or Family Finder, tests to our Family Tree DNA database. Besides telling you if you have close relatives, the tests will be helpful as DNA science improves. Think of our Family Tree DNA Mayflower Project as a vault that will privately own and hold our DNA information similar to the vault here in Plymouth where we hold your applications. Both have robust security and privacy rules that protect our information.

If you have tested at Ancestry.com, 23andme.com, myheritage.com, or FamilyTreeDNA.com, your DNA tests can be uploaded to our Mayflower project. Some also upload their family trees and DNA results to GedMatch, a database for storing and exchanging genealogical information so that many different computer programs can use it. Instructions to do that are at the end of this report. Note also that uploading your raw data file to FamilyTreeDNA.com, GedMatch.com, and

MyHeritage.com is free. Many DNA enthusiasts upload to all sites to check for more matches since member databases are different.

How do you understand the results you receive? The Family Tree DNA Learning Center will help: https://www.familytreedna.com/learn/ftdna/webinars/. The webinars there will go a long way in helping you understand the results. In addition, you can contact our two administrators, who are fellow Mayflower Society members. Both Mike Terry at mterry3158@sbcglobal.net and Susan Abanor at susanabanor@gmail.com have spent thousands of hours administrating our Family Tree DNA Mayflower Project. Mike is our expert on Y-DNA and Susan is our expert on mtDNA. Please say thanks when you talk with them and appreciate their contributions as volunteers for our society.

Jim Brewster, a Mayflower descendant and Group Project Assistant Manager at Family Tree DNA, is in attendance during this GBOA meeting. We thank him for his DNA lecture last night. If you didn't attend, stop and ask him questions at the DNA exhibition center table to learn more about how important you are to our continued research. We must strive to eventually test all of our members' DNA if GSMD is to continue as the 'gold standard' in genealogy research.

It likely won't be many more years before a DNA test is required with your documentation to apply for Mayflower Society membership. Learn what you can about the world of DNA because we will be hearing a lot about it in the genealogical field. At the very least, get tested, encourage your family to test, and upload the tests to our Mayflower Family Tree DNA Project.

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Thank you to Mayflower Society members Mike Terry, Susan Abanor, Surgeon General Naomi Mann, Myrtle Savage, Muriel Cushing, David Patek, Dennis Klotter, Lydia Ozenberger, and Dr. James Egan for their work on genealogical DNA through the years and for their help in making this project possible.

Thank you to Family Tree DNA including Chief Executive Officer Bennett Greenspan, James Brewster, Janine Cloud, and the entire staff of Gene by Gene, Ltd. for their partnership and the many hours and cost incurred as they continue to help us identify DNA matches to Mayflower passengers.

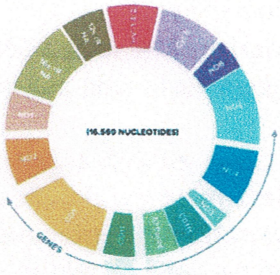
FamilyTreeDNA

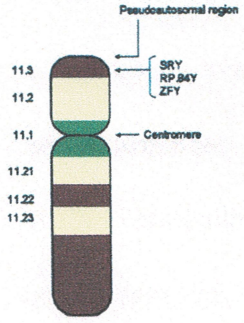
Introduction to Genetic Genealogy

Types of DNA

Mitochondrial DNA

The genetic material found in mitochondria. It is passed down from females to both sons and daughters, but only daughters pass mtDNA to their children. This inheritance pattern reveals the direct maternal line, the mother's mother's mother's mother. Both men and women can test mitocondrial DNA.



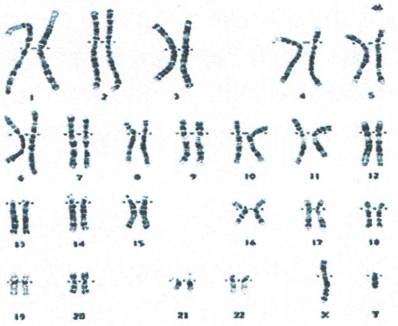


Y-DNA

DNA from the Y chromosome is used to trace paternal ancestry. Men pass their Y chromosome to their sons. Throughout generations, small changes take place. The amount of time these mutations took to happen can be estimated, giving a starting place to look for genealogical connections.
Only men can test Y-DNA.

Autosomal DNA

DNA chromosomes located in the cell nucleus. Humans have 22 pairs of autosomal chromosomes (autosomes) and a pair of sex chromosomes (X, Y for men, X, X for women). Those 22 pairs of chromosomes include recombined DNA from each parent, whose DNA was recombined from each of their parents. Both men and women can test autosomal DNA.



X-DNA

Short tandem repeat (STR) markers on the X chromosome have been used in forensic and siblingship cases, as well as population genetics. Men only have one X chromosome which they get from their mother, so they know that all X matches come from their maternal side. Women have two X chromosomes, one from each parent. Since the maternal X chromosome consists of segments recombined (mixed together) from both her X chromosomes, the inheritance pattern is more complicated. X-DNA information is included in autosomal DNA tests.

Useful terms

Ancestor: Someone from which you descend. Grandparents, great-grandparents, etc.
Descendant: Someone who comes from a specific ancestor. You are your grandparent's descendant, your children are their descendants.
Direct: Descending along a straight gender line, maternal or paternal, mother's mother's mother or father's father's father.
Locus: A specific location in your genetic code. In a genetic map of our DNA, the locus tells us where to find any base.
Marker: A gene or a DNA sequence which has a known location on a chromosome. This includes any single nucleotide polymorphism (SNP), short tandem repeats (STRs) and any location in the DNA that is

associated with a trait or a disease. In genetic genealogy, the result of testing various markers helps determine the closeness of a match.
Mutation: A heritable change that occurs in genetic material. It may lead to a different number of repeats of a certain sequence or a change in one of the bases in a sequence.
Match: The result of comparing two testers using the same type of DNA test who have a common ancestor at some point in time.
Haplogroup: A major branch on either the maternal or paternal tree of humankind. Haplogroups are associated with early human migrations and geographic region or regions.
Phylogenetic Tree: Both mtDNA and Y-DNA are arranged in evolutionary trees that illustrate how the mutations and haplogroups are related to each other.
Recombination: The mixing of the DNA on each chromosome that you receive from your mother and father, much like shuffling two decks of cards together.
Short Tandem Repeat (STR): Sequences of nucleotides that repeat at certain positions on the chromosome. Counting the number of times those repeats occur at a panel of locations allows comparison between people to determine degrees of relatedness.
Single Nucleotide Polymorphism (SNP): A change in your DNA code at a specific point, or locus. Referred to as a SNP, pronounced "snip." Found in all four types of DNA, they're particularly useful in Y DNA in tying genealogy to geographic origins.

Sources

https://www.familytreedna.com/learn/glossary/
http://www.merckmanuals.com/home/fundamentals/genetics/genes_and_chromosomes.html
https://genographic.nationalgeographic.com/science-behind/genetics-overview/

Resources

www.isogg.com - International Society of Genetic Genealogists
http://www.ncbi.nlm.nih.gov/ - National Center for Biotechnology Information
http://genome.ucsc.edu/ - Genome Browser
https://dna-explained.com/ - Blog on Genetic Genealogy
https://www.youtube.com/watch?v=2QfI3iRnGDo&t=2296s - A video explaining FTDNA tools
https://www.youtube.com/watch?v=U_mPClKX3ls - Maurice Gleeson with DNA tests

Autosomal Transfer Program

If you or a family member have previously tested your autosomal DNA at 23andMe©, AncestryDNA™, or MyHeritage, you can transfer your results to Family Tree DNA by uploading your raw data file. After transferring your file, your autosomal data is uploaded to our database, one of the world's largest genetic genealogy databases.

When you transfer, for free, you will receive a list of your autosomal matches from our database and have access to our Family Finder – Matrix. The Matrix feature allows you to select and compare the autosomal DNA relationship between up to ten of your matches at one time.

Important: Each account is for one individual. If you have an existing Family Tree DNA kit and are attempting to upload data for a different individual, you MUST create a new account for the transfer.

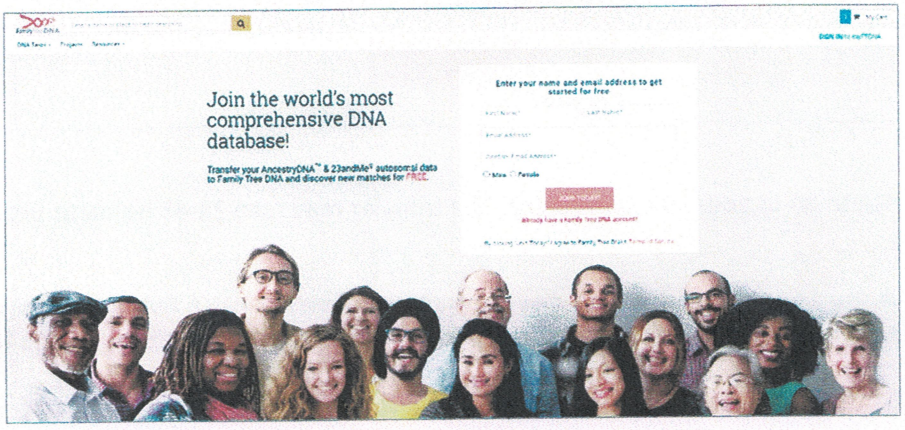
After transferring, you can unlock all Family Finder features, which include the Chromosome Browser, myOrigins, and ancientOrigins for only $19.

Please note that you can only transfer 23andMe© V3 and V4 or AncestryDNA™ V1 and V2 files. Unfortunately, at this time, you cannot transfer 23andMe© V1 or 23andMe© V2 results. Also, because of the smaller file sizes, AncestryDNA™ V2 and 23andMe© V4 files will get all but speculative matches, which are those at the 4th to remote and 5th to remote cousin levels.

How to Upload your Autosomal Transfer Data

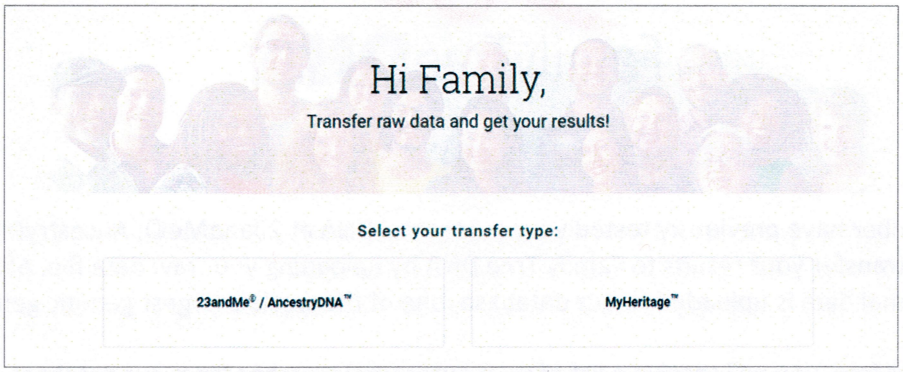
1. On the Family Tree DNA Homepage, in the upper-left corner, click DNA Tests near the top-left corner to display the drop-down menu.

2. On the drop-down menu, click Autosomal Transfer. This will direct you to the autosomal DNA transfer page.



3. Complete the fields by entering the first and last name, email address, and gender of the person whose data you are transferring. (If you are transferring someone else's data, make sure to enter their name and gender NOT yours.)

4. After entering the appropriate information, click Join Today. Please note that upon clicking Join Today, you are agreeing to Family Tree DNA's Terms of Service. You will be directed to the upload page.



5. Select the type of transfer file you wish to upload.

6. On the upload page, click browse file to browse to the autosomal DNA results file you want to upload, or drag and drop the file on the boxed area. The file will start uploading. Note that this could take several minutes. Once uploaded, the name of the file you uploaded will be displayed in the boxed area.

7. Click Submit to submit the uploaded file. Note that if you uploaded the wrong file, you can click ***remove*** in the gray box to remove the file and upload the correct one. Once submitted, the *Welcome to Family Tree DNA* page is displayed. On the welcome page, your kit number is displayed. It is important to keep this kit number for your records. You will need this number to sign in to your kit in the future. Also, an email will be sent to the email address you entered on the transfer page. This email will contain your password to sign in to your kit.

8. Click Go to MyFTDNA to go to your kit's dashboard. The transfer may take 24-48 hours to process, depending on processing volume.

Note: You can also click the Sign the release form electronically to sign the FTDNA Release form. You will need to sign the Release Form to review your matches or access the matrix. However, you can also sign this form at a later time.

Family Tree DNA - Genealogy by Genetics, Ltd. 1445 North Loop West, Suite 950
Houston, Texas 77008-1673, USA Phone: (713) 868-1438 | Fax: (832) 201-7147
Email: https://www.familytreedna.com/contact.aspx
https://www.familytreedna.com

HAVE YOU HIT THE END OF YOUR PAPER TRAIL?

DNA testing with Family Tree DNA can help! Thousands of people worldwide use DNA testing to aid in their genealogical research.

FamilyTreeDNA

VISIT FAMILYTREEDNA.COM OR CALL US AT 713-868-1438 TO LEARN MORE.

MORE THAN 8,000 DNA PROJECTS

From surnames, geographic regions, haplogroups, and more, these free-to-join group projects can help propel your genetic genealogy to the next level and connect you with a community of enthusiastic genealogists all working to help uncover their family histories. Representing more than 250,000 surnames, these groups include over 200 projects associated with members of the Guild of One-Name Studies. If your surname is not currently in a project, you can still utilize DNA testing for your genealogy through one of our many other geographic or haplogroup projects. You can join an unlimited number of projects to meet all your genealogical needs.

SOME OF OUR DNA PROJECTS:

- **SMITH**
- **ROBINSON**
- **FERGUSON**
- **PIKE**
- **JOHNSON**
- **MACLAREN**
- **DRISCOLL**
- **BROWN**
- **WILLIAMS**
- **WILSON**
- **WYATT**
- **CREWYS**
- **JONES**
- **POMERY**
- **TAYLOR**
- **MURPHY**

FAMILY TREE DNA ALLOWS YOU TO:

- Determine if two people share a common ancestor
- Confirm a research theory
- Find others to whom you could be related
- Confirm genealogical connections to a clan
- Confirm connections in a family tree
- Obtain clues about your deep ancestral origin
- Rule out unrelated lines

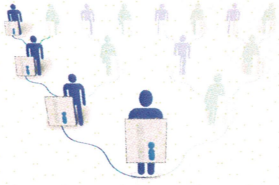
COMPREHENSIVE DATABASE

A genetic genealogy database is only as valuable as its scope. The more comprehensive the database, the richer the experience. Family Tree DNA has the only comparative databases that include Y-DNA, mtDNA and autosomal DNA. With test takers from all over the world, you can make international connections. As our database grows, so can your match list.

GSMD

EXPLORE YOUR ANCESTRY & GENEALOGY

Y-DNA Father's Line



- Verify if two males are related on the direct paternal (father's, father's father's, etc.) line
- Research surname origins
- Suggests geographic origins
- Reveal father's deep ancestral origins
- Only men can take this test

mtDNA Mother's Line

- Verify if two people are related on the direct maternal line
- Suggests geographic origins
- Reveal mother's deep ancestral origins
- Both men and women can take this test

FAMILY FINDER

- Find relatives across all lines
- Determine degree of relationship
- Make contact with your matches
- Great test for adoptees

RESULTS

Family Tree DNA delivers results electronically. When you order, a personal page is created and we send an email to you with your sign in information. We will send you notifications when your results are ready and periodically as you get new matches. You can sign into your account at **www.familytreedna.com/login.aspx** to view your results and matches.

TO ORDER A DNA TEST

- Fill out the form below and mail it to us.
- Order online at **www.familytreedna.com** or by joining a group project at **www.familytreedna.com/projects.aspx**

Select the type of test you would like in the checkboxes, fill in the contact and payment information below, and mail to: **FAMILY TREE DNA, 1445 NORTH LOOP WEST, SUITE 820, HOUSTON, TX 77008, USA**

Take advantage of these limited time offers!

Hurry! Offers expire 9/16/2018

CUSTOMER INFORMATION:

☐ **Family Finder** NOW **$69** (reg. $79) — Use Code: WRHFL

☐ **Y-DNA 37** NOW **$139** (reg. $169) — **Use Code: RKMAX**

☐ **Y-DNA 67** NOW **$238** (reg. $268) — **Use Code: RKMAX**

☐ **mtDNA Full Sequence** NOW **$169** (reg. $199) — **Use Code: YHERL**

FIRST NAME _____ LAST NAME _____ KIT NUMBER (Return Customer) _____

ADDRESS _____ CITY _____ STATE _____ COUNTRY _____ POSTAL / ZIP CODE _____

EMAIL ADDRESS _____ PHONE NUMBER _____ ◯ FEMALE ◯ MALE

◯ CREDIT CARD PAYMENT AMEX VISA MasterCard ◯ PAYPAL (send to payments@familytreedna.com, include kit# if is available) P ◯ CASH ◯ CHECK

CARD NUMBER _____ EXPIRATION DATE (mm/yy) _____ CVC (Required) _____ NAME (as it appears on your card) _____

PHONE _____ BILLING ADDRESS (if same as above, disregard this option) _____

Please include **$12.95** postage and handling **only if mailing in**. Please be sure to include your full credit card number, expiration date and security code. Missing information will delay your order.
Please mail to Family Tree DNA, 1445 North Loop West, Suite 820 Houston, TX 77008, USA

He lpful DNA Website Links and Emails

www.FamilyTreeDNA.com
www.Ancestry.com
www.MyHeritage.com
www.23andme.com
www.GedMatch.com

Join Request for Mayflower Project: https://www.familytreedna.com/my/group-join (Type Mayflower in the search box)

Y-DNA Administrator: Mike Terry, mterry3158@sbcglobal.net
mtDNA Administrator: Susan Abanor, susanabanor@gmail.com

GedMatch Upload Instructions: http://thednageek.com/how-to-transfer-your-ancestrydna-test-to-other-databases/

Upload Ancestry.com, MyHeritage.com, 23andme.com, and GedMatch.com test results to FamilyTreeDNA.com
Instructions: https://www.familytreedna.com/autosomal-transfer

Upload DNA results from other sites to MyHeritage
Instructions: https://faq.myheritage.com/DNA/Upload-DNA-data/951693061/How-can-I-upload-a-DNA-file-to-MyHeritage.htm

FTDNA Learning Center: https://www.familytreedna.com/learn/ftdna/webinars/

A free family tree that also has a Mayflower project: https://www.wikitree.com

Lean about DNA at the International Society of Genetic Genealogy:
https://isogg.org/wiki/Genetic_genealogy

DNA Explained: https://dna-explained.com/2014/02/03/charting-companion-from-progeny-software/

General DNA Testing company with Adoption information: https://www.legacytree.com/genetic-genealogy-dna

American Ancestors.com has guides, classes, and offers geneticists for hire:
https://www.americanancestors.org/search/site-search?q=DNA

If you would like an electronic copy of this resource guide and the 2018 GBOA DNA report for an upcoming Member Society newsletter, contact Lea Filson at fggfilson@themayflowersociety.org.