



What Can DNA Testing Do For Me?



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Red Mountain Mesa Library



Queen Elizabeth
Barcelona, Spain
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All slides and handouts can be found at:

<http://www.familytreeaz.com/Presentations/>

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- What is a consumer DNA test?
- What is the process of taking a consumer DNA test?
- What can a DNA Test do for me?
- How can the results of my taking a DNA test be used?
- Are there any concerns about taking a DNA test?

- Next steps

- NOTE: this is a “high-level” overview of DNA testing. There’s a lot more to learn and detailed topics to discuss that won’t be covered in this class.

What is a consumer DNA test?

- A consumer DNA test is one that extracts portions of your DNA from a saliva test
- There are 3 common types of DNA tests available to the consumer public: **autosomal**, Y-DNA, and mitochondrial DNA. This presentation only concerns autosomal testing.
- Your DNA consists of 22 autosomal chromosome pairs plus 1 pair of “X-DNA” chromosomes
- NOTE: there are other non-consumer DNA tests out there that are primarily used by medical or forensic professionals



What is the process of taking a consumer DNA test?

- First step is to order a DNA test from one of the commercial vendors (23andMe, Ancestry, MyHeritage, and FamilyTreeDNA)
 - Note that there are other companies but these are the only ones recommended at this time



What is the process of taking a consumer DNA test?

- Price is typically between \$50 and \$100
- Once a test has been purchased and received it's a fairly quick and easy process to take a saliva sample either from spit or from a cheek swab
- The sample kit is then sent back to the company for analysis
- Results typically take 2 to 10 weeks



<https://knowyourdna.com/ancestry-kit-review/>

What Can a DNA Test Do For Me?

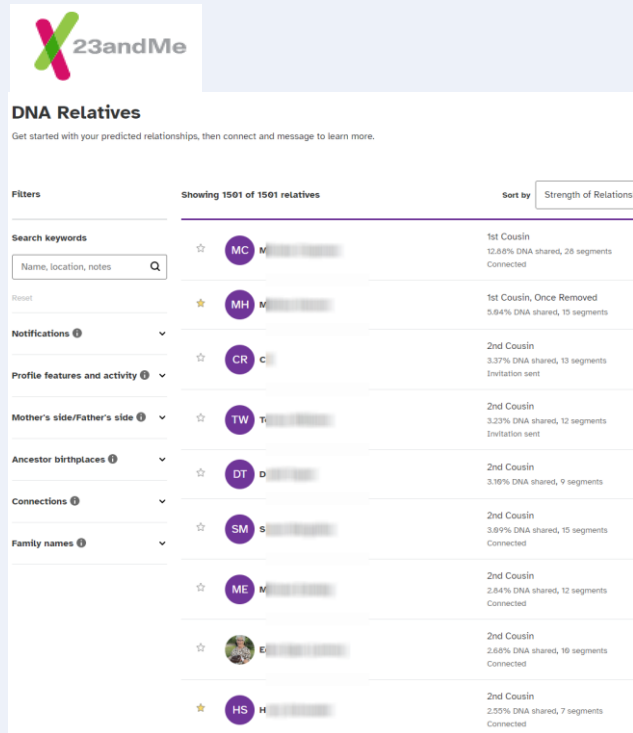
- When you have a new DNA test analyzed you'll typically get:
 - Some sort of ethnicity (also known as admixture) estimates
 - A list of others who have tested with the same company and match your DNA at some minimum level
 - Some companies and tests may also supply some medical health information

What Can a DNA Test Do For Me?

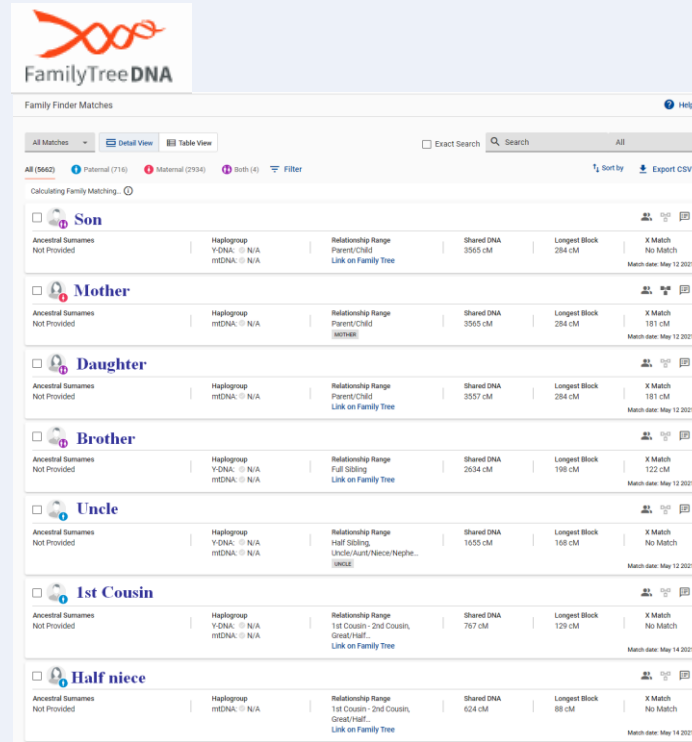
- For genealogical (family history) purposes the primary interest is the list of DNA matches
 - In addition, sometimes the ethnicity results can be useful but it's important to emphasize that these are just estimates

What Can a DNA Test Do For Me?

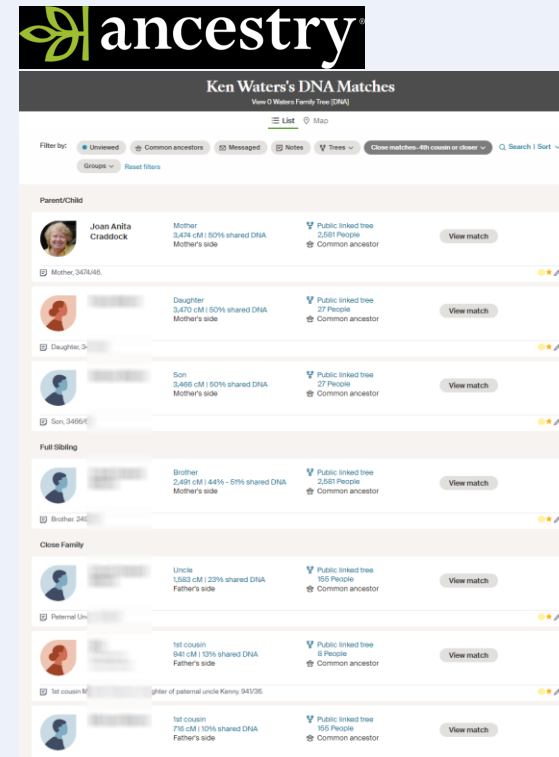
- Examples of DNA match lists:



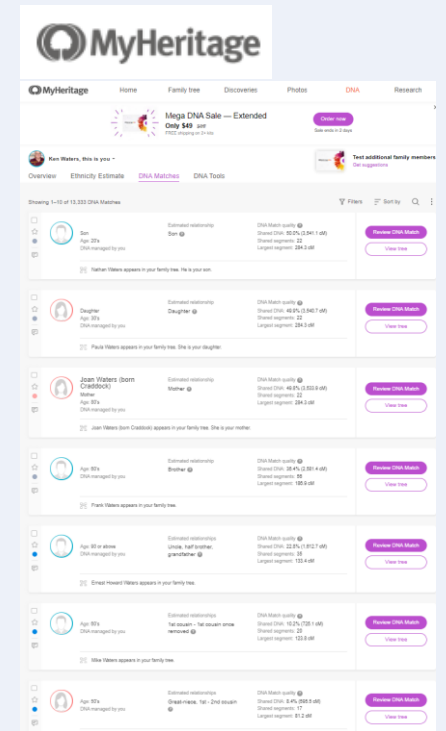
The screenshot shows the 23andMe DNA Relatives interface. It features a search bar for keywords, a filter sidebar on the left with categories like 'Notifications', 'Profile features and activity', 'Mother's side/Father's side', 'Ancestor birthplaces', 'Connections', and 'Family names', and a main list of relatives. The list is sorted by 'Strength of Relationship' and shows 1501 matches. The top matches include a 1st Cousin (13.84% DNA shared), a 1st Cousin, Once Removed (5.84% DNA shared), a 2nd Cousin (3.27% DNA shared), a 2nd Cousin (3.23% DNA shared), a 2nd Cousin (3.19% DNA shared), a 2nd Cousin (3.69% DNA shared), a 2nd Cousin (2.84% DNA shared), a 2nd Cousin (2.85% DNA shared), and a 2nd Cousin (2.55% DNA shared).



The screenshot shows the FamilyTreeDNA Family Finder Matches page. It displays a table of matches with columns for relationship, haplogroup, shared DNA, longest block, and match date. The matches are ordered by relationship, starting with 'Son' (3555 cM shared DNA), 'Mother' (3565 cM shared DNA), 'Daughter' (3557 cM shared DNA), 'Brother' (2634 cM shared DNA), 'Uncle' (1655 cM shared DNA), and '1st Cousin' (767 cM shared DNA). Each match includes a 'View match' button and a 'Link on Family Tree' option.



The screenshot shows the AncestryDNA page for Ken Waters's DNA matches. It features a search bar and a filter sidebar. The matches are categorized into 'Parent/Child', 'Full Sibling', and 'Close Family'. The top matches include 'Joan Anita Craddock' (Mother, 3,478 cM shared DNA), 'Daughter' (3,470 cM shared DNA), 'Son' (3,456 cM shared DNA), 'Brother' (2,495 cM shared DNA), 'Uncle' (1,563 cM shared DNA), and '1st cousin' (841 cM shared DNA).

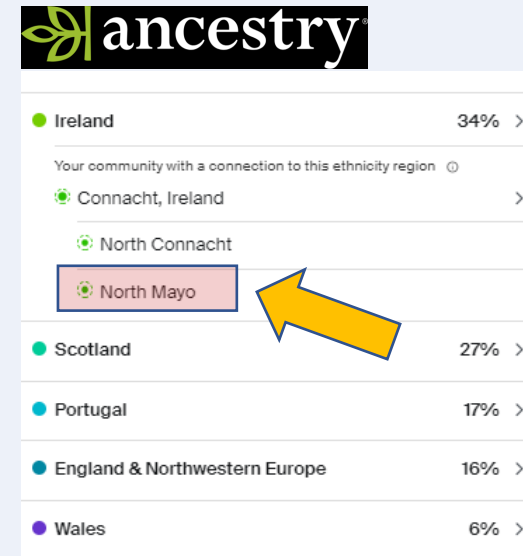
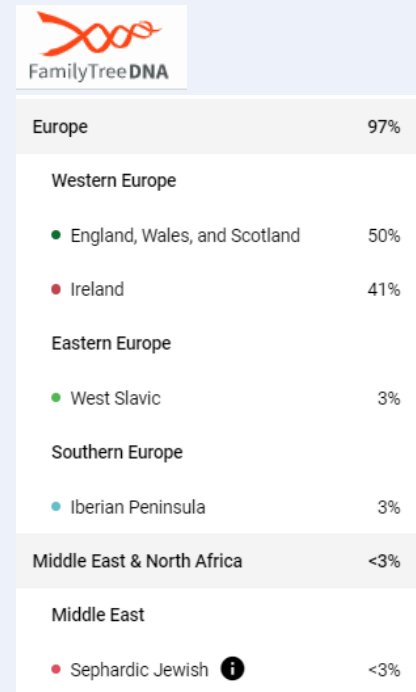
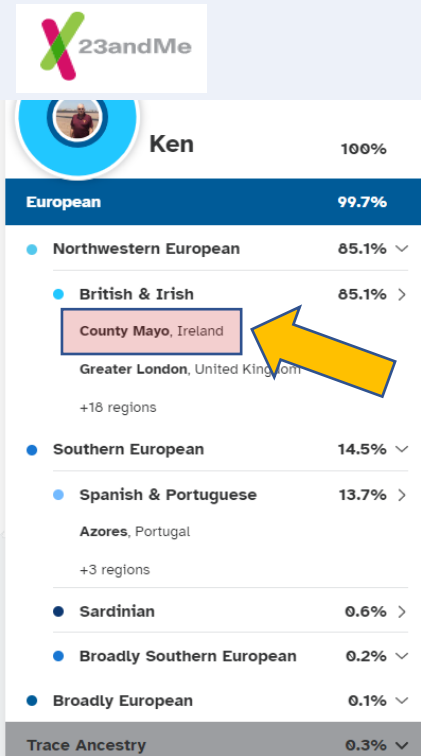


The screenshot shows the MyHeritage DNA Matches page. It features a search bar and a filter sidebar. The matches are categorized into 'Parent/Child', 'Full Sibling', and 'Close Family'. The top matches include 'Son' (3,478 cM shared DNA), 'Daughter' (3,470 cM shared DNA), 'Son' (3,456 cM shared DNA), 'Brother' (2,495 cM shared DNA), 'Uncle' (1,563 cM shared DNA), and '1st cousin' (841 cM shared DNA).

- Typically matches are ordered with most closely related at the top

What Can a DNA Test Do For Me?

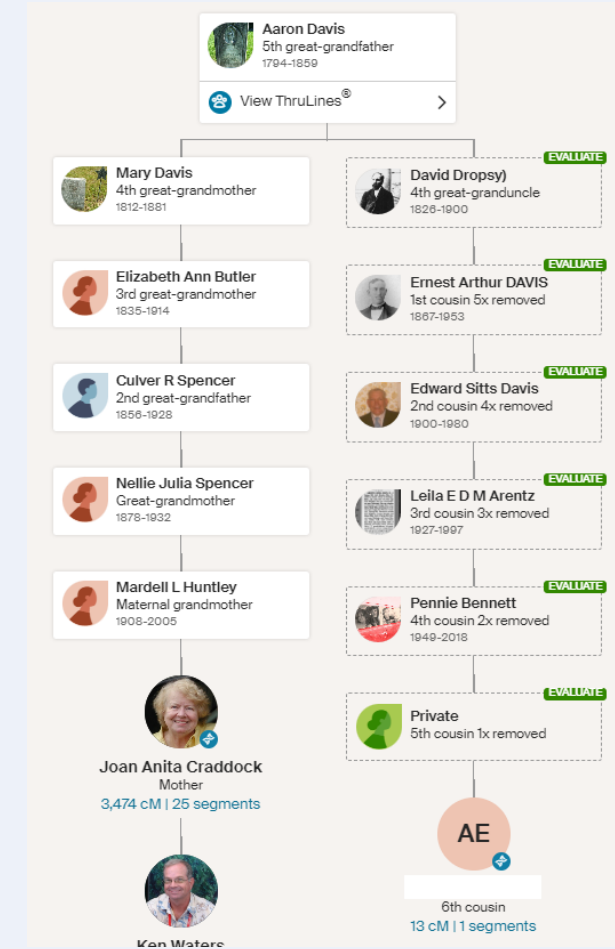
- Examples of ethnicity estimates:



- Notice the very wide variation across testing companies; also these results frequently change

How can the results of my taking a DNA test be used?

- By you:
 - To find family kin, everything from possible parent-child relationships out to 5th or 6th cousins (or even further back in some cases)
 - With some work this information can be very useful for doing family history research
 - To get an estimate of your ancestral history by countries or geographic areas
 - To get some indication of possible health traits inherited from your ancestors



Example of a confirmed 6th cousin with common ancestors back to 19th century

How can the results of my taking a DNA test be used?

- By others:
 - To solve their family history mysteries
 - You are helping others do family histories by submitting a DNA test
 - This can even include identifying possible parent-child relationships
 - To aid solving forensic mysteries such as:
 - Solving unidentified person cases such as:
 - “Jane/John Doe” searches identifying deceased victims
 - “foundling” searches to identify relatives and identities of newborn abandoned babies
 - Identifying crime perpetrators



The image is a screenshot of a news article from FOX 10 PHOENIX. The top navigation bar includes 'News', 'Weather', 'Live Video', 'Webcams', 'Seen on TV Links', 'Contests', and 'More'. A red banner below the navigation bar reads 'Flash Flood Warning' with a subtext 'until 5:30 PM MST, Coconino County'. The article title is 'Unsolved: DNA match reveals major development in decades-old Jane Doe cold case'. Below the title is a video player with a play button and a share icon. The video player has a caption: 'Unsolved: DNA match reveals major development in decades-old Jane Doe cold case'. Below the video player is a small text line: 'Unsolved: DNA match reveals major development in decades-old Jane Doe cold case'. The main text of the article begins with 'APACHE JUNCTION, Ariz. - The Apache Junction Police Department in Arizona says it's closer to identifying a teen found dead nearly three decades ago after teaming up with genetic genealogists who have gathered new information in the case of "Apache Junction Jane Doe."'.

How can the results of my taking a DNA test be used?

- Very important notes:
 - These types of uses (forensic crime and unknown identity cases) are limited to tests performed from only one of the DNA companies (FamilyTreeDNA) or tests that have been uploaded by the consumer to a 3rd party site, GEDMatch
 - The 3 other companies (Ancestry, 23andMe, and MyHeritage) do not allow use for these purposes

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NEWS FEATURE | 09 September 2020 | [Correction 23 September 2020](#)

The controversial company using DNA to sketch the faces of criminals

Parabon Nanolabs shot to fame using DNA and genealogy analysis to solve cold cases. Then it hit a setback.

[Carrie Arnold](#)

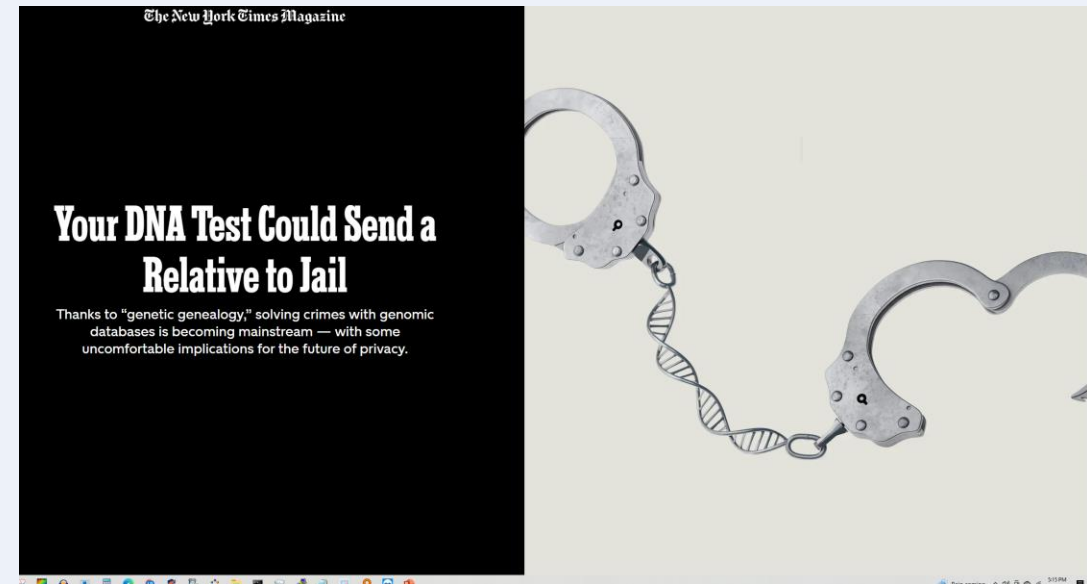
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Traces of crime-scene DNA have been matched to suspects using genealogy databases. Credit: Jochen Tack/imageBROKER/Alamy

Are there any concerns about taking a DNA test?

- In a word...."yes"
- If you are concerned that you or a close relative may be involved in a crime then there's a distinct possibility that they could be identified due to your taking of a DNA test
 - Of course, hopefully, for most of us that should not be a concern
 - In most cases when this is the case it's much more likely that the target would be a distant relative rather than a close family member




Are there any concerns about taking a DNA test?

- If there is a possible family secret that might be uncovered by your taking a DNA test then this consideration must be thought through carefully
 - It's possible that your DNA test may help others to discover surprise relationships that could lead to significant upsetting results

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| FATHER'S DAY |
How a DNA Surprise Led One Man to the Truth About His Father
MICHAEL KIEFER | JUNE 17, 2022 | 9:00AM



Roland Tanglao

f t e p r

I learned a lot about my family in 2019. More than I wanted to.

Are there any concerns about taking a DNA test?

- Health results
 - If you take a test from one of the companies that supply health information (in particular 23andMe) then you may get some unsettling information
 - If this is a concern then it can't be stressed enough that you should seek professional medical opinions including the use of more advanced DNA testing



STAT

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TRENDING: BIOTECH PHARMALOT HEALTH CORONAVIRUS

Reveal the Best Drug Targets with Expanded CRISPR Screening

FIRST OPINION

23andMe had devastating news about my health. I wish a person had delivered it

By Dorothy Pomerantz Aug. 8, 2019 [Reprints](#)



ERIC BARADAT/AFP/GETTY IMAGES

Last summer, I thought it might be fun to have my DNA analyzed. Two companies, 23andMe and Ancestry.com, had popped up again and again in my social feeds, so I decided to join the party and see if I could blame my penchant for salty food on my genes. And as a journalist, I was just naturally curious.

So like [26 million](#) other people, I ordered a testing kit online, [spat into a tube](#), and sent my saliva off to Silicon Valley. Any concerns I had were around privacy. I checked all of the boxes to keep my results as secret as possible and went back to my normal life.

Are there any concerns about taking a DNA test?

- Insurance
 - Some have indicated concerns that taking a DNA test might impact life insurance coverage due to medical results
 - To my knowledge this has never been the case and insurance companies do not have access to your consumer DNA test results
 - **HOWEVER:** this is a rapidly-changing field and the situation could change at any time



The screenshot shows the MedlinePlus website interface. At the top, there is a blue header with the NIH logo and the text 'National Library of Medicine'. Below this is the MedlinePlus logo, which consists of a green and blue stylized 'M' icon followed by the text 'MedlinePlus' and 'Trusted Health Information for You'. To the right of the logo is a search bar with the placeholder text 'Search MedlinePlus' and a link 'About MedlinePlus'. Below the logo and search bar is a navigation menu with the following items: 'Health Topics', 'Drugs & Supplements', 'Genetics', 'Medical Tests', and 'Videos & To'. The main content area of the page is white and contains the following text:

Home → Genetics → Help Me Understand Genetics → Direct-to-Consumer Genetic Testing → Can the results of ability to get insurance?

Can the results of direct-to-consumer genetic testing affect my ability to get insurance?

Passed in 2008, a federal law called the [Genetic Information Nondiscrimination Act \(GINA\)](#) made it illegal for health insurance providers in the United States to use genetic information in decisions about a person's health insurance eligibility or coverage. This means that health insurance companies cannot use the results of a direct-to-consumer genetic test (or any other genetic test) to deny coverage or require you to pay higher premiums. However, GINA does not apply when an employer has fewer than 15 employees.

GINA does not apply to other forms of insurance, such as disability insurance, long-term care insurance, or life insurance. However, some states have laws that cover these forms of insurance. Unless prohibited by state laws, companies that offer these policies have the right to request medical information, including the results of any genetic testing, when making decisions about coverage and rates. Some of these companies request information about genetic testing as part of their application process, but others do not. It is unclear whether genetic information, including the results of direct-to-consumer genetic testing, will become a standard part of the risk assessment that insurance companies undertake when making coverage decisions.

You should weigh the possible benefits and risks of direct-to-consumer genetic testing, including potential impacts on insurance eligibility and coverage, before you start the testing process.

Next Steps



DNA PAINTER



- Learn, learn, learn!
 - How to work with DNA matches
 - Get familiar with great 3rd party tools such as DNAPainter, DNAGedcom, and GEDMatch
- Build out your family tree
- Try contacting your DNA matches (warning: results can vary!)

Next Steps

- Consider a family heritage trip to research your family roots



- Explore the possibilities of taking more DNA tests:
 - Y-DNA for males
 - Mitochondrial DNA for all
 - Testing close relatives (what we call “target testing”)

Upcoming Classes

- **Sat, Oct 29, 1pm - 2pm**

Title: Deep Dive on MyHeritage DNA

Description: Everything you need to know about testing your DNA with MyHeritage and uploading DNA kits from other companies. We will explore some of the great tools MyHeritage has to examine DNA matches and examine some of the reasons you should be using them for genetic DNA genealogy.

- **Sat, Nov 12, 1pm - 2pm**

Title: Make Your Own DNA Family Tree Charts

Description: In this class we will cover making your own charts of DNA matches. How to do it and why it can be very powerful to organize your DNA matches. We will discuss how to integrate your DNA match data from different companies in order to validate and extend your family tree.

- **Sat, Dec 10, 1pm - 2pm**

Title: A Unified Process for Working with Ancestry DNA Matches

Description: We will discuss a useful methodology for working your DNA matches starting with the basics and then digging deeper into ways to improve your Ancestry DNA efforts. This will include using Tag Groups, shared matches, and identifying those matches in order to add to your family tree.



All classes are free to attend and require no registration. Classes are held at the Red Mountain Mesa Public Library at 635 N Power Rd in Mesa.



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Me with my paternal uncle,
Kenny Waters, 1929-2022