

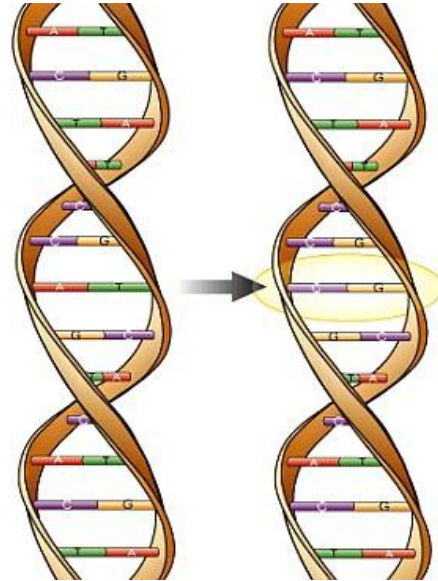
# Isles of the Hebrides DNA Project by Linda Heron

## **MY OWN JOURNEY INTO THE WORLD OF DNA**

I am certainly no expert in the field of DNA testing, as I only recently decided to test my own mt-DNA. I am still on the sharp side of the learning curve, but I have found the best way to learn is to jump right in with both feet, and that's what I've done. I consider my journey into the world of DNA to have been very worthwhile, and quite fascinating!!

I will give you my own personal opinions which do not represent any authority on the subject, by any stretch of the imagination, so please do your own research to draw your own conclusions. There is a lot of information out there and I am only going to tell you about my own experience, and to briefly cover a few basics. If you would like to learn more I highly recommend you check out the links below.

I have been researching my family history for over twelve years now, and I first heard a few snippets and comments about DNA on one of the genealogy newsgroup message boards a few years ago. It sighted DNA as a new and powerful tool for Genealogy Research. I didn't need any convincing -- right from the beginning I could see the potential in DNA testing to help me push back the barriers in my genealogy research, to go beyond the paper trail that usually only begins in the late 1700's to early 1800's -- if we're lucky. The field of DNA intrigued me and I wanted to explore it further.



In August of 2006 I decided to go for it, and ordered my mt-DNA Plus test kit from FTDNA. Within about a week my kit arrived. I immediately followed the directions and mailed my kit back to impatiently await the results. About four weeks later FTDNA sent me a notice by email to inform me my results were now posted on the personal web page provided for my use. From this website I can compare my test results against thousands of others in the database to look for matches, join or start projects, and enter my data into a multitude of other databases and search engines.

You can immerse yourself into the DNA world to whatever degree you desire. I have joined a DNA newsgroup (listed below), and whenever I have a question I put it out there for an answer. There are always lots of very knowledgeable people offering their interpretations, advice and help.

## **HOW CAN DNA TESTING HELP IN GENEALOGY RESEARCH**

DNA research is an amazing tool to help you connect with living relations. It cuts straight to the chase -- you are matching your individual unique markers against others in the database to find someone with the same or similar markers -- it might not be who you expect. These matches or mismatches can send your genealogy research off into a whole new direction.

Y-DNA can help you determine whether two different families with the same surname are closely related, and how far back you might find a common ancestor. DNA can also show relationships where none were expected.

As you know, with the Clan system, oftentimes names went under a Sept or Clan, and were interchangeable, using the Clan name when it suited them, or not. Names were also written

down by Census takers when they didn't speak or understand the language -- so names and spellings of names were often changed. The patronymic naming system only really became popular in the mid-1500s, so often we will find DNA matches outside of our surname. For this reason we still need our paper trail because that is what shows us how we are related -- it is our history -- our Ancestors' story and journey. A close match with someone outside your paper documentation can show you are related, and perhaps give you more clues of where you might look -- and approximately how far back.

I started my genealogy research on my Campbell, MacNab and MacCuaig branches over fourteen years ago, and it has proven to be very frustrating for many reasons. Not only does the paper trail end at a certain point, but my ancestors made it even more of a challenge for me by changing their names from MacCuaig to McLeod when they arrived in Canada. When I started my research I was looking for McLeod, not MacCuaig, and I had no idea where in Scotland to even start looking. Eventually I sorted it all out, but am limited to how far back I can go because so few paper records even exist past the late 1700s.

The DNA we carry can show us not only our recent ancestry, but also our deep, deep ancestry, back thousands of years. Every so many generations our DNA will mutate, and it is those mutations that set us apart from others and helps us determine to which Haplogroup we belong.

### **MY OWN EXPERIENCE**

Mt-DNA testing is not helpful in surname projects, because, as you know, the females do not carry the surname. We can however determine our ancestor's migration patterns, and sometimes establish relationships through a complete match. Often we will discover which particular culture our ancestors likely belonged to, whether it be the Celts, Viking, Germanic, Native American, etc..

It was my curiosity about my 2 x Great Grandmother, Mary MacCuaig, that first started me on my genealogy search to find my roots and to know as much as I could about her. I didn't realize it at the time, but I was starting my research with my direct mt-DNA maternal line, and my test results were to reveal our deep ancestry going back further than I could ever have hoped.



My mt-DNA Haplogroup is U4. The U stands for Ulrike (picture right), meaning "Mistress of All" in German. My mt-DNA has been passed down to me from my Mother; and to her from her mother, going all the way back thousands of years to Ulrike. She lived during the ice ages about 18,000 years ago in the cold refuges of the Ukraine at the northern limits of habitation. Just under 2% of today's living Europeans are descendants of Ulrike, in a straight maternal (mother-to-child only) line. My Haplogroup has shown up in high concentrations in the Khanti Mansi, Nganasans, and the Kets, in Northwestern Siberia. Ulrike is my, well who knows how many times, Great Grandmother.

Many of your ancestors also came from the Isles, and I am very interested to see how many matches we can find within our pool of Isles of the Hebrides DNA Project members.

### **THE ISLES DNA PROJECT**

FTDNA offers the option of joining several surname and geographical projects, and if there isn't one which interests you, you can start one that will. In the interests of furthering my own

genealogy research, and of helping others do the same, I decided to create a database of Islay people to compare both Y-DNA and mt-DNA -- and so began the Isle of Islay DNA Project.

Shortly after starting this Project I was approached by several people asking me to open and expand it to include some of the other Isles. Their reasoning was that many families were spread out and moved amongst several of the Isles in the Hebrides. It made sense, and so I followed their advice and the project morphed into the Isles of the Hebrides DNA Project. As many of us have discovered through their genealogy research, these Isles were often very densely populated, and it will be interesting to see how closely we are all related.

This Isles of the Hebrides DNA Project is a geographical project which includes Y-DNA and mt-DNA participants in a direct maternal or paternal line back to the Isles. The Isles of the Hebrides include Arran, Barra, Benbecucla, Bernera, Berneray, Bute, Canna, Coll, Colonsay, Cumbrae, Eigg, Eriskay, Gigha, Grimsay, Iona, Islay, Jura, Kerrera, Kilda, Lismore, Muck, Mull, North Uist, Raasay, Rum, Scalpay, Skyre, Slate, South Uist, Staffa, Taransay, Tiree, Vatersay, Luing, [Scarba](#), etc.

### PROJECT GOALS

1. Show any common DNA ancestry between surnames, Clans or Isles;
2. Connect our families beyond any available records or archives;
3. Show migration patterns;
4. Discover our Ancestors' ancient cultural heritage and history; and
5. Combine DNA and genealogical evidence to help the Isles descendants find a more complete answer to a multitude of questions about their ancestry.

### HOW TO JOIN THE PROJECT

Our Isle of the Hebrides Project is growing, but the more people in our database the better chance we have of making those connections we all strive for. This is an FTDNA Project, so in order to join you must

1. be tested through FTDNA;
2. have an ancestor in either your direct paternal or maternal line who originated on one of the Isles of the Hebrides in a straight line back, or
3. currently lives on one of the Isles of the Hebrides.

Participants must also indicate from which Isle their ancestor originated. This will help track where our Isles ancestors migrated to and from. This information can be entered on your Personal Webpage in the Preferences section.

For new members wishing to join this Project, this is a great time to take advantage of the Gift Certificates Family Tree DNA is offering -- valid only until 31 December 2009:

- ✚ Y-DNA37 – promotional price \$119 (reg. price \$149)
- ✚ Y-DNA67 – promotional price \$209 (reg. price \$239)
- ✚ mtDNA Plus – promotional price \$139 (reg. price \$149)
- ✚ SuperDNA – promotional price \$488 (reg. price \$665)

In addition, the new permanent prices for the Full Mitochondrial Sequence:

- ✚ New Kit (Full mtDNA Sequence) \$279
- ✚ Upgrade from HVR1 -- \$229
- ✚ Upgrade from HVR2 -- \$209
- ✚ mtDNA Full Sequence after testing YDNA -- \$249

You can check out this Project at [www.familytreedna.com/public/isleofislay](http://www.familytreedna.com/public/isleofislay). If you decide to join, just click on the "REQUEST TO JOIN THIS GROUP" on the left side of the page and you will be taken to a sign-up page. Complete the form and you will automatically receive the special discounted price that is available to project members only. Please contact me [by email](#) once you have done that and I will arrange for the gift certificates to be applied to your account.

If you have already tested with FTDNA and would like to join this Project, just go to your Personal Web Page and click on the "JOIN" button on the left side of your page. This will take you to the Project selection page, and you should scroll down to the "Geographical DNA Projects" area -- click on "I" for Isles of the Hebrides, and just follow the instructions.

I extend my deepest apologies to those who would like to join this Project but can't because they are not descended in a straight paternal or maternal line back to one of the Isles. It is vital to the integrity of this Project that we adhere to these specifications. If we don't remain vigilant to this rule we will lose the integrity and value of the Project.

For those who do not qualify for this Project but would like to have their DNA tested, you will find a large selection of other surname and geographical projects to choose from at FTDNA [www.ftdna.com](http://www.ftdna.com). It is best to test through a Project so you can receive a discounted price.

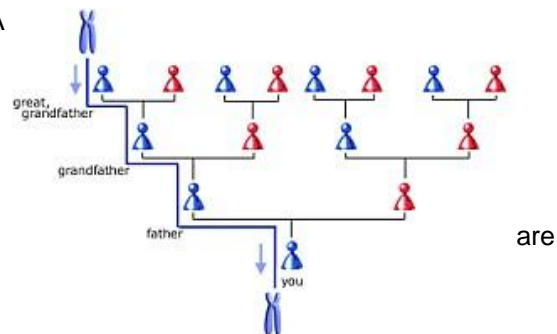
I am not affiliated with Family Tree DNA (FTDNA) in any way; other than my husband and I chose FTDNA for our DNA testing. I chose FTDNA because they have been around the longest and have an excellent reputation. There are many other testing companies, and I encourage you to check them out before joining the thousands who have taken the leap into the world of DNA.

## DNA 101

This is by no means a complete and full description or explanation of all terms and lingo -- for that I would need to write a book -- and I think I'll leave that up to the experts. FTDNA has already prepared an excellent tutorial on DNA that I suggest you check out at [www.ftdna.com/tutorial\\_A.html](http://www.ftdna.com/tutorial_A.html). In the meantime, I will share some of the basics in my own words:

## HAPLOGROUPS

A Haplogroup consists of a group of haplotypes. A haplotype consists of a series of alleles (or markers), at specific locations on the chromosome. Certain markers mutate slowly and some mutate much more frequently, and these differences in markers and mutations give us a base to compare our own results with. If we go back in history far enough, you would find that we all related.



For the purpose of human genetics the haplogroups studied are the Y-DNA and mt-DNA, both of which help to define different genetic populations and their migration patterns. Y-DNA is passed on solely through the patrilineal line; and mt-DNA is passed on solely through the matrilineal line.

## DNA TESTING

### Mt-DNA

A female carries mitochondrial DNA (mt-DNA). She inherits her mt-DNA from her mother. A mother passes her mt-DNA on to her male and female offspring. A female only carries mt-DNA and therefore can only test for mt-DNA.

My 2, 3 & 4 X Great Grandmothers on my mother's side all originated in the Oa of Islay, and their mt-DNA has been passed down, from mother to daughter, generation after generation for thousands of years, all the way down the line to me.

### **Y-DNA**

A male carries both Y-DNA and mt-DNA, and can be tested for both. He inherits his Y-DNA from his father and his mt-DNA from his mother. He can only pass on his Y-DNA to his male offspring. He cannot pass on his mt-DNA.

My MacCuaig 2, 3 and 4 X Great Grandfathers on my mother's side also all lived on Islay; however, only the males who have passed down their Y-DNA unbroken from father to son will carry their Y-DNA. I am actively looking for a male cousin -- an off-spring of my MacCuaig/McLeod family, to encourage him to test his Y-DNA. We already have one McQuagge in the Isles Project, and I'm hoping more will join.

### **TYPES OF TESTS**

For genealogy researchers who are interested in finding genetic matches I recommend purchasing the DNA test covering the most markers you can afford. There are several mt-DNA and Y-DNA testing options listed below. Y-DNA testing gives you options of a 12, 25, 37 or 67 marker test. When you compare your test results against someone else's, you will ultimately look for a match on as many markers as possible. The higher number of markers you have tested, the more you can compare against others and the greater the degree of accuracy in determining a common ancestor.

#### **Paternal Tests:**

**Y-DNA 12 Marker** - The 12 marker test only provides you with 12 out of a possible 67 markers to compare your results with others -- there will usually be dozens of matches at the 12 marker level. Most people who test at 12 markers usually upgrade to 37 or 67 markers. I don't recommend it if you are using it to further your genealogy research.

**Y-DNA 25 Marker** - Now you are comparing 25 markers out of a possible 67. When you move up to the 25 marker level a lot of those matches you had at 12 markers fall away. You can still match at 25 markers though and go right off into the ditch when you upgrade to 37 or 67. Are you starting to get the idea?

**Y-DNA 37 Marker** - When you move up to the 37 marker level your matches will be greatly reduced again, and you are finding a much higher likelihood of finding a relationship.

**Y-DNA 67 Marker** - You will usually have very few matches at the 67 marker level -- those that do match will be related within a few generations -- depending on how and where your markers match.

#### **Maternal Tests:**

**Mt-DNA** - This only tests the HVR 1 Mutations, and only gives you a very basic and general idea of your Haplogroup -- if you're lucky. Again, not much use if you are seriously looking for definite information.

**Mt-DNA Plus** -- This test gives you HVR1 and HVR 2 Mutations -- which should give you all you need to determine your Haplogroup and locate your deep ancestry. There are no guarantees of matches even with the HVR1 and HVR2 mutations, but they give you much more data to compare.

**MtDNA Full Sequence (Mega)** - Tests and charts 16,500+ mitochondria. It is probably the only test you will need to take -- it is for the very inquisitive and puts you in position for applying the

more advanced scientific papers published now and in the future. It may show genetic markers which carry certain diseases. This is not for the faint of heart.

### **Combination Test:**

Y-DNA 36 + mt-DNA Plus or Y-DNA 67 + mtDNA Plus - This is a combination test available for those males who would like to test both their mt-DNA and Y-DNA all in one go, and at a better price than testing individually -- the Y-DNA 37 or Y-DNA 67 + mt-DNA Plus. There is also a Y-DNA 12 + mt-DNA offered, however, neither of these would be suitable for genealogical purposes.

### **HOW IS THE SAMPLE TAKEN?**

I can only speak for FTDNA and Sorenson as I have tested with both.

FTDNA provides you with a kit that consists of a cotton swab, a small plastic tube, and a box to return the sample. Take the cotton swab out of the plastic container, rub the swab on the inside of your mouth in the cheek area, put the swab back into the plastic tube, place it in the box provided, and mail it all back to FTDNA. You will get your results within five to six weeks usually.

Sorenson provides a small container with a liquid that tastes and looks like a mouthwash. You place this liquid in your mouth, holding it there for about a minute, then spit it back into the container, seal it and send it back in the cardboard box provided.

Sorenson testing is free, however, you are not provided with your results. You should consider it as a donation for the following purpose: "By demonstrating the close genetic relationships shared by the entire human family, we have a tremendous opportunity to promote peace, compassion and connection. Showing how we are all related, and how closely, has the potential to remove barriers between nations and peoples today that can be addressed in no other way." By James L. Sorenson.

### **DNA LINKS**

#### **Testing Companies**

There are several testing companies with varying prices and offerings. Make sure you compare apples with apples. You definitely get what you pay for in DNA testing. My personal recommendation is Family Tree DNA as they are offering the most comprehensive testing, along with your own personal web page and the choice of several Projects to join.

Family Tree DNA (FTDNA) - [www.familytreedna.com](http://www.familytreedna.com)

FTDNA Pricing & Info - [www.familytreedna.com/pricing.html](http://www.familytreedna.com/pricing.html)

Genographic Project: - [www.genographic.com](http://www.genographic.com)

DNA Ancestry - [dna.ancestry.com](http://dna.ancestry.com)

DNA Heritage - [www.dnaheritage.com](http://www.dnaheritage.com)

Family Genetics - [www.familygenetics.co.uk](http://www.familygenetics.co.uk)

Oxford Ancestors - [www.oxfordancestors.com](http://www.oxfordancestors.com)

### **DNA DATABASES**

Once you have tested your mt-DNA or Y-DNA you should enter your DNA signature into one of the many DNA databases available to see if you match with anyone, and how closely. These are some of the databases available:

Mito-search - [www.mitosearch.org](http://www.mitosearch.org)

Y-search - [www.ysearch.org](http://www.ysearch.org)

Sorenson Molecular Genealogy Foundation (SMGF) - [www.smgf.org](http://www.smgf.org)

YHRD Database - [www.yhrd.org](http://www.yhrd.org)

DNA Heritage - [www.ybase.org](http://www.ybase.org)

**Please check out this link for an excellent DNA tutorial:** [www.ftdna.com](http://www.ftdna.com)

**DNA NEWBIES** - A Newbie is anyone new to the field of genetic DNA research -- I still consider myself a Newbie. If you are interested in testing, I highly recommend you join the newsgroup below as it is for Newbies who want to learn but don't even know what to ask yet. It is great to sit back and read answers to some of the basic questions -- there are no dumb questions in this newsgroup. You will also hear first-hand about the different testing companies and the success or lack of success others have had. Just ask that question and you will get lots of different opinions.

DNA for NEWBIES - Information - [isogg.org/newbiemenu.htm](http://isogg.org/newbiemenu.htm)

DNA-Newbie Newsgroup - [groups.yahoo.com](http://groups.yahoo.com)

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