BOUSE GENIES NEWSLETTER

Volume 10, Number 2 Spring 2016

GENETIC GENEALOGY

[From the Spring 2016 SKP Genies Newsletter]

Today there is so much more to doing genealogy research than studying the roots, branches and the leaves of our family tree. We also have the ability and the resources to study its trunk. When we start to do this we are entering the related discipline of genetic genealogy.

As the term implies, genetic genealogy is the hybrid of the scientific study of heredity variations and traditional family history research using primary and secondary documents in order to conclude familial relationships.

The scientific aspect of genetic genealogy is accomplished by taking one or multiple DNA tests. DNA tests for genealogical purposes are done using saliva swabs—no needles, blood or urine are involved. They are not physically invasive, although you cannot say the same about the impact it may have on your wallet.

WHY INCLUDE GENETIC GENEALOGY IN YOUR RESEARCH PLAN?

In addition to learning more about your ancestry and possibly breaking down a brick wall or two, there are several reasons:

- to prove your documented family tree reflects your actual ancestry;
- to prove/disprove relationships of people with the same name;
- to discover where your roots originated;
- to find biological relatives of an adopted, foster or step-child;
- to help unravel complex family relationships;
- to determine from which ancestor(s) your traits were inherited.

WHEN AND WHERE SHOULD YOU START DELVING INTO GENETIC GENEALOGY?

Start by reading this edition of the *Bouse Genies Newsletter*. In addition to articles written by the newsletter staff, there are also articles by Norman Cutshall, a retired scientist who has been working on his family history for five years and involved in genetic genealogy research since 2012.

Study the purposes and the strengths/weaknesses of each type of DNA test and make sure each test you choose is applicable to your research objectives and questions.

Test the oldest generation before it is too late.

Follow social networking sites and blogs focused on genetic genealogy. Cyndi's List <www.cyndislist.com/dna/social> and the Genealogy Junkie's site <www.genealogyjunkie.net/blogs--mailing-lists.html> have comprehensive lists of sites.

As you research the trunk of your family tree, be prepared for astonishing surprises and be ready to duck as those brick walls come tumbling down. ❀

IN THIS ISSUE

Bouse Genealogical Society

Electronic Newsletter

Published 4 times a year for the members of the Bouse Genealogical Society

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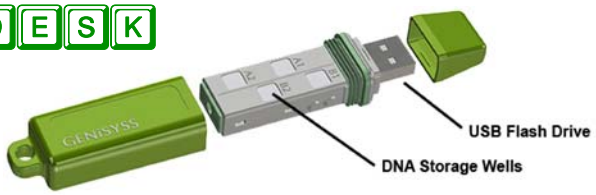
The Bouse Genies meet the first and third Friday of the month from, October - April, at the Bouse Booster Club or Bouse Public Library. See the meeting schedule in this newsletter.

The Bouse Genies Website is:

FROM THE COMPUTER DESK

GENISYSS DNA VAULT FLASH DRIVE: STORE YOUR GENEALOGY WITH YOUR DNA



By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

Genisyss at <www.genisyss.com> has developed a flash drive where you can store the physical DNA of your family members, and the digital personal information about each DNA sample. It is hard to believe how it works until you see one. The great thing about these flash drives is you can store the DNA of up to eight family members on one flash drive, enter the personal and genealogical data associated to each sample and store it in your home until needed. Nothing happens to the samples until you or a family member needs it.

Over the last 20 years we have all seen the advances in DNA to identify inherited biological, physical and mental conditions. We have also seen how the scientific community has restored DNA from bones thousands of years old. Therefore, we know that no matter how many years these samples are stored in the sealed cover of the flash drive, when stored at room temperature, the DNA will be there when needed.

The donor only needs to give a very small sample of blood, saliva, or other biological tissues and fluids. The sample can be used for laboratory or forensic investigations. For example:

- They can be used for personalized medicine for diagnosing and tracking genetic illnesses passing through family lines.
- Gather individualized information about predispositions toward certain disorders.
- Identify suspects at crime scenes, thereby speeding up investigations and utilizing law enforcement resources at maximum efficiency.
- Useful to identify individuals taken from field-collected DNA containing biosamples.
- Can be used to track missing persons as they leave DNA “trails.”
- Construct family trees and map out genealogical information with surety.

Genisyss doesn’t extract, analyze, process, or otherwise handle the DNA samples. The product user has complete control over any and all usage of their genetic information. The collection and storage solution requires minimal training to use in forensic applications. Since the corresponding information is input into the program resident on the flash drive, no additional software is required. Samples can be taken quickly and discretely.

This is a DNA tool that every family should have available. We have an eight slot DNA vault containing DNA from five generations of the Sidney A. BROWN family (yes we have five living generations—Sidney A. BROWN is 104.) The flash drives are $40 for four sample slots, and $80 for eight sample slots. ❀

WEBSITES FOCUSED ON GENETIC GENEALOGY

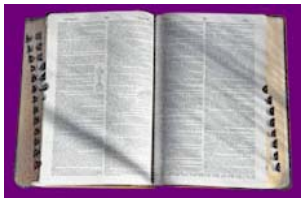
Genetic genealogy is the most dynamic of the many aspects of family history research. To broaden your knowledge about this fascinating, complex field of study, check out these URLs.

National Genealogy Society’s Continuing Genealogical Studies: *Genetic Genealogy, the Basics*
www.ngsgenealogy.org/cs/genetic_genealogy

Beginners Guide to Genetic Genealogy
https://sites.google.com/site/wheatonsurname/beginners-guide-to-genetic-genealogy

Genetic Genealogy Standards
www.geneticgenealogystandards.com ❀

In a Word: Deoxyribonucleic Acid



By Barbara A. H. Nuehring [From the Spring 2016 SKP Genies Newsletter]

Deoxyribonucleic Acid, better known and easier pronounced by its acronym, DNA, is a double-stranded molecule that encodes genetic information in all living things—making each species and each individual in a species unique. The molecule, a double helix, looks like a twisted ladder.

Nucleotides are the structural components of our DNA. Each is composed of a sugar molecule, a phosphate molecule and a chemical base. The chemical bases are adenine (A), thymine (T), guanine (G), and cytosine (C). The bases always complement one another—adenine and thymine (AT) pair together and cytosine and guanine (GC) pair together. Thousands of nucleotides are contained within DNA.

Base Pairs, the "rungs" on the DNA "ladder", is the term used by geneticists for the two complementary nucleotides on the opposing strands of DNA. Base pairs having a specific function are called genes.

Sequencing is the scientific process of determining the exact order of the base pairs in a segment of DNA.

Single Nucleotide Polymorphism, commonly called SNP (snip), is a change in the sequence of the base pairs. It may be a different number of repeats of a certain sequence or a change in one of the bases in a sequence. For instance, AT would replace a GC base pair. When this occurs, it is known as a mutation.

Mutation is a permanent structural alteration in the DNA. Germ line mutations occur in an egg or sperm and can be passed on to offspring, while other types of mutations occur in body cells and are not passed on to future generations.

Human Genome, the genetic information one inherits from its parents, consists of 23 pairs of chromosomes—22 pairs of autosome chromosomes (non-gender chromosomes that mix or recombine) and one pair of sex chromosomes. The X-chromosome is present in both sexes and is passed down from mother to child, while the Y-chromosome is passed down from father to son making it valuable for surname-based genealogy studies.

Marker is an identifiable physical location on a chromosome whose inheritance can be monitored.

Genetic Distance has two definitions. (1) When comparing Y-chromosome DNA or mitochondrial DNA, it is the number of differences or mutations between two sets of results. A genetic distance of zero means there is an exact match. (2) For autosomal DNA comparisons, it refers to the length of a DNA segment.

centiMorgan (cM) is a measurement of how likely a segment of DNA is to recombine from one generation to the next. For humans, one million base pairs average about one centiMorgan making the rate of recombination highly variable.

Locus is the specific physical location of a gene or other DNA sequence on a chromosome. Think of it as a genetic street address.

Allele is one of two or more forms of the DNA sequence of a particular gene inherited separately from each parent. Each gene can have different alleles. For example, in humans, one allele of the eye-color gene produces blue eyes and another allele of the eye-color gene produces brown eyes.

Haplotype is the set of different combinations of alleles inherited as a unit. Two individuals who match exactly on all markers have the same haplotype.

International Society of Genetic Genealogy (ISOGG) <http://isogg.org> is an organization whose purpose is to "advocate for and educate about the use of genetics as a tool for genealogical research while promoting a supportive network for genetic genealogists". ❀

USING DNA IN YOUR RESEARCH

By Norman Cutshall [From the Spring 2016 SKP Genies Newsletter]

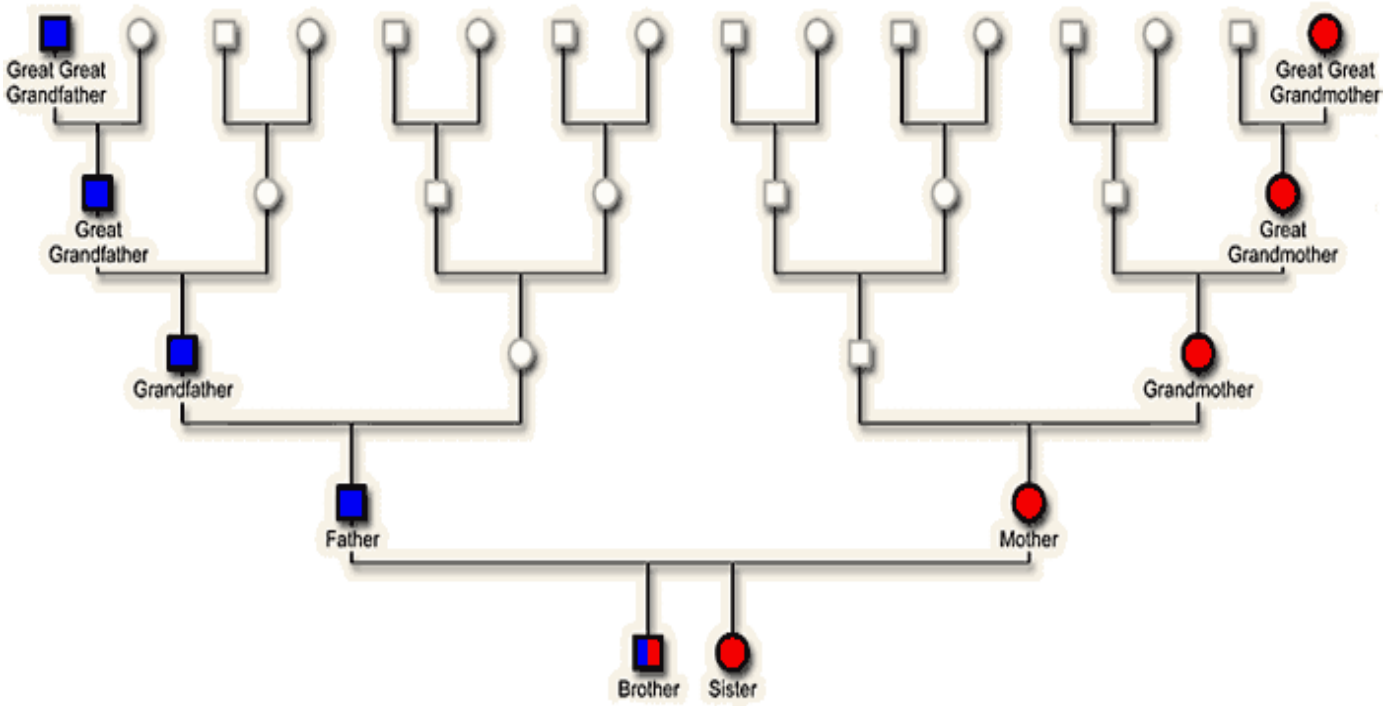
Have some gaps in your tree? Have doubts about relationships? Tired of mis-copied, misspelled names or outright lies in official records? Want new, highly reliable and exciting ways to view your ancestry? Genetic genealogy can help with all these and more. This brief overview is aimed to help you get started with a new approach to learning about your ancestry, whether you are a “newbie” or have been at it for years.

Genetic genealogy is the combination of DNA data with conventional methods of researching ancestral history. It enables proof (or disproof) of relationships and allows you to discover new branches in your family tree.

Deoxyribonucleic acid (DNA), a molecule present in every cell, is accurately copied into new cells. During reproduction it carries the recipes for life to the new generation. Rarely, flaws occur in making new DNA and these flaws (mutations) are also accurately passed on to the new copies. Sometimes mutations result in flawed functions and may even cause death in the new cell or organism. More often they serve as “markers” that identify their source. Only a small portion of our DNA carries the information for the functions of life; the remainder has no known purpose. Thus, mutations in the unused portions do not cause harm, but serve as markers. DNA testing searches for two types of mutations called SNPs (single nucleotide polymorphisms) and STRs (short tandem repeats).

DNA forms genes which, in turn, form chromosomes. Chromosomes occur in two locations in the cell—the mitochondria and the nucleus. In the nucleus there are 22 chromosome pairs (called autosomal DNA) and the sex chromosomes, X and Y. When germ cells (egg or sperm) are formed they receive one half of each chromosome pair and either the X or the Y. An egg cell also receives a copy of the mitochondrial DNA but a sperm cell does not. Thus, mitochondrial DNA is transmitted from mother to child.

Autosomal DNA is contributed equally by mother and father. Finally, mothers transmit an X chromosome and fathers contribute either an X for a daughter or a Y for a son. This intricate system of inheritance is easily seen in this graphic.



INHERITANCE PATHWAYS OF Y CHROMOSOMES (BLUE), AUTOSOMAL DNA (WHITE) AND MITOCHONDRIAL DNA (RED).

DNA Tests for Genealogy

Different tests are available for different purposes. Since Y-chromosomes pass from father to son, Y-tests reveal the paternal line and Y-inheritance usually corresponds to surname inheritance. Mitochondrial tests follow the maternal line, while autosomal tests reveal a combination of both maternal and paternal ancestry.

How Do I Test?

Many commercial tests are available and are easily accessed through the Internet. The International Society of Genetic Genealogy (ISOGG) lists most of these <http://isogg.org/wiki/List_of_DNA_testing_companies>. Three companies dominate the US genealogy market: *23andMe, AncestryDNA*, and *Family Tree DNA*. Each company has advantages and veteran genetic genealogists usually recommend testing at all three in order to maximize the chances of finding unknown relatives. As part of a test the company will compare your pattern of markers to the patterns of thousands of other clients and report the most similar profiles. Each company has its database of previous testers and they do not share data. Thus, in order to have the highest likelihood of finding matches, you must "fish in all three ponds" as the experts say. See the article, "DNA Testing with the Big 3" on page 17.

I Have Been Tested. Now What?

The report format is somewhat different for each company, but all have some attributes in common. Matches to other people with similar profiles are shown. Typically, better matches, i.e., those with more DNA in common are shown first. The degree of matching, measured in centiMorgans (cM), is used to estimate the relationship. For example, a match of 3500-3600 cM indicates a parent-child pair. Matches of ~2600 cM are indicative of full siblings and lower matches share fewer cM. The *ISOGG* website offers helpful tables that show the probable relationships

Once you identify a matching relative, contact them to determine how you may be related. Serious genealogists are generally willing to share information.

Useful Sites

Other specialty sites can be very helpful with your research.

Gedmatch <www.gedmatch.com> is the most popular site for after-testing research. This free site allows you to upload results from the testing companies for further analysis and provides a chance to look for matches to people from all three.

DNA Adoption <www.DNAAdoption.com> is loaded with helpful guidance not only for adoptees, but also for any user seeking to get the most out of their results.

Facebook includes numerous groups focused on genetic genealogy.

Ethnicity Estimates and More

Some DNA testing sites provide ethnicity estimates and are very popular and are fun to look at and contemplate. The basic science for ethnicity estimates, however, is not as reliable as that for ancestry. Results from different sites will give different results for ethnicity.

Each testing company offers tutorials whether or not you test with them. Genetic genealogy is a relatively new field; the earliest tests were offered around 2000. It has grown rapidly and each of the three companies now claims over a million users.

Further information is abundant through books or the Internet. A Google search on "genetic genealogy" will generate many hits. The International Society of Genetic Genealogy (ISOGG) at <http://isogg.org> offers a wealth of information. ❀

When two opposite points of view are expressed with equal intensity, the truth does not necessarily lie exactly halfway between them. It is possible for one side to be simply wrong.

~ Richard Dawkins, biologist and author

WHAT ARE DNA HAPLOGROUPS?

By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

Both Y-DNA and mtDNA carry the haplogroup gene from parent to child, i.e., male to male and female to female. Haplogroups are determined by single-nucleotide polymorphism (SNP) tests. SNPs are locations on the DNA where one nucleotide has "mutated" or "switched" to a different nucleotide. The deeper the SNP test the more localized the information. Today only *Family Tree DNA* performs Y-DNA and mtDNA tests.

A haplogroup is basically a clan the individual has descended from and pertains to a single line of descent, usually dating back thousands of years. Over the ages many haplogroups have died out and new ones have been established. Haplogroups are assigned letters of the alphabet, and refinements consist of additional number and letter combinations.

Roughly half of European men carry Y haplogroup R, and mitochondrial haplogroup H is found in nearly 50% of all Europeans-–both descending from one single person tens of thousands of years ago. Haplogroups are the pedigree charts of all clans of humanity and they all began in Africa. However, over time mutations occurred and with each mutation the haplogroup was divided and a new group was formed.

To be able to identify the new group, the original group was divided into two sub-groups or for haplogroups they are referred to as clades. The original sub-group was renamed, and the new sub-group was named. This process continued through time. There are many sub-groups and scientists have been able to identify the area of the world where the mutation took place.

Haplogroups today are divided into four main ones: European, African, Native American, and Asian. Within these haplogroups are many sub-haplogroups that further define where a person's earliest known non-African ancestor on the male and female sides of their family originated and when. Most haplogroup sub-groups are plentiful. The only group with less than three sub-groups is the Native American male group, which only has two sub-groups.

MALE HAPLOGROUPS

Biallelic SNP markers are single base-pair mutations (polymorphisms) that occur at different Y-chromosome locations about once every 7000 years. There are over 150 known haplogroups. Haplotypes defined by the 31 STR markers are subgroups under the haplogroups. More information on the known Y-DNA haplogroups may be found at Y-Chromosome Biallelic Haplogroups <http://www.roperld.com/YBiallelicHaplogroups.htm>.

FEMALE HAPLOGROUPS

When an individual has their mtDNA tested, they automatically receive their mtDNA haplogroup. The haplogroup can only be confirmed by testing specific branch-defining SNPs, some of which are only found in the coding region. Similar to Y-DNA haplogroups, to identify the specific subclade mtDNA haplogroup the individual would have to have the full sequence mtDNA test performed.

The test for mtDNA also determines the genetic haplogroup an individual descends from. As such, membership of a haplogroup, by any individual, relies on a relatively small proportion of the genetic material possessed by that individual.

SEVEN DAUGHTERS OF EVE

In 2001, Bryan Sykes published his book *The Seven Daughters of Eve* in which he identified seven lines of maternal descent using haplogroups going back thousands of years. He associated these daughters to seven "clan mothers".

The seven "clan mothers" each correspond to one or more human mitochondrial haplogroups.

Ursula: corresponds to Haplogroup U (specifically U5, and excluding its subgroup K)

Xenia: corresponds to Haplogroup X

Helena: corresponds to Haplogroup H

Velda: corresponds to Haplogroup V

Tara: corresponds to Haplogroup T

Katrine: corresponds to Haplogroup K
Jasmine: corresponds to Haplogroup J

Additional Daughters

Since the time of Sykes first book about the mothers of modern Europeans, there have been additional mtDNA haplogroups discovered all over the world. He subsequently wrote that with the additional data from Scandinavia and Eastern Europe, Ulrike could have been promoted to be the eighth clan mother for Europe.

Others have put the number at 10, 12 or even 18. These additional "daughters" generally include haplogroups I, M and W. For example, a 2004 paper re-mapped European haplogroups as H, J, K, N1, T, U4, U5, V, X and W.

Sykes has invented names for an additional 29 "clan mothers" worldwide, each corresponding to a different haplogroup identified by geneticists: "Fufei, Ina, Aiyana/Ai, Yumi, Nene, Naomi, Una, Uta, Ulrike, Uma, Ulla, Ulaana, Lara, Lamia, Lalamika, Latasha, Malaxshmi, Emiko, Gaia, Chochmingwu/Chie, Djigonasee/Sachi, Makeda, Lingaire, Lubaya, Limber, Lila, Lungile, Latifa and Layla."

So, what “clan mothers” are your very distant ancestors? ❀

The Human Genome Project

By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

It is hard to believe the Human Genome Project actually began150 years ago, although it was not known by that name at the time. The following is a compilation of the timeline of the Human Genome Project taken from the *Genome Unlocking Life’s Code* website at <https://unlockinglifescode.org/>.

In the Beginning – 1865

Gregor Mendal, the father of modern genetics, presented his research on experiments in plant hybridization. He used the monastery garden for crossing pea plant variations having different heights, colors, pod shapes, seed shapes, and flower positions. Mendel’s experiments, between 1856 and 1863, revealed how traits are passed down from parents. For example, when he crossed yellow peas with green peas, all of the offspring peas were yellow. But when these offspring reproduced, the next generation was 3/4 yellow and 1/4 green. Mendel’s work, which he presented in 1865, showed what we now call “genes” determine traits in predictable ways.

Associating Proteins from the Cell Nuclei

Frederich Miescher researched white blood cells which are found in large quantities in infections. In 1869, he isolated a new molecule from the cells’ nuclei and called it “nuclein”. Nuclein (aka DNA) contained hydrogen, oxygen, and a unique ration of phosphorus to nitrogen. Although Miescher studied nuclein throughout his career, he and other scientists of that time believed proteins were the molecules by which traits passed from parents to children.

The Shape of DNA

In 1952, Rosalind Franklin took two sets of high-resolution photos of crystallized DNA fibers and looked at the dimensions of DNA strands, with phosphates on the outside of what appeared to be a helical structure. Franklin’s paper on her X-ray diffraction data was published in the same issue of *Nature* as Watson and Crick’s paper introducing their 3-D model of DNA structure.

In 1953, James Watson and Francis Crick discover the double helix structure of DNA. To create a model of the structure of DNA, they used paper cutouts of the bases (A, C, G, T) and metal scraps from a machine shop. Their model represented DNA as a double helix, with sugars and phosphates forming the outer strands of the helix and the bases pointing into the center. Hydrogen bonds connect the bases, pairing A–T and C–G; and the two strands of the helix are parallel but oriented in opposite directions.

DNA or Deoxyribonucleic Acid

In the early 1960s, Marshall Nirenberg and National Institutes of Health colleagues focused on how DNA

directs protein synthesis. In 1968, Nirenberg shared the Nobel Prize in Physiology or Medicine for his contributions to breaking the genetic code and understanding protein synthesis.

In 1977, Frederick Sanger developed the classical "rapid DNA sequencing" technique, now known as the Sanger method, to determine the order of bases in a strand of DNA. Thus, he developed the method for identifying the markers in DNA—a sequence with a known physical location on a chromosome. Markers can help link an inherited disease with the responsible genes. DNA segments close to each other on a chromosome tend to be inherited together. Markers are used to track the inheritance of a nearby gene that has not yet been identified but whose approximate location is known. The marker itself may be a part of a gene or may have no known function.

DNA AND DISEASES

In 1983, Huntington's Disease (HD) was the first genetic disease mapped. The mutation consists of increasing repetitions of "CAG" in the DNA that codes for the protein huntingtin. The number of CAG repeats may increase when passed from parent to child, leading to earlier HD onset in each generation. The gene was finally isolated in 1993.

At the same time as the discovery of the gene for HD was the invention of polymerase chain reaction (PCR) technology for amplifying DNA, which is considered one of the most scientific advances in molecular biology. PCR is used every day to diagnose diseases, identify bacteria and viruses, and match criminals to crime scenes.

In 1989 the Cystic Fibrosis (CF) gene mutation was identified. Researchers identified a small DNA mutation in 70% of cystic fibrosis patients, but not in healthy individuals. The discovery of the CFTR (cystic fibrosis transmembrane conductance regulator) gene is the single most important discovery to date in CF research.

The first evidence of the Breast Cancer (BRCA1) gene was discovered in 1990. BRCA1 is a "tumor suppressor gene," which normally produces a protein that prevents cells from growing and dividing out of control. However, certain variations of BRCA1 can disrupt its normal function, leading to increased hereditary risk for cancer. The gene was finally isolated in 1994. Today, researchers have identified more than 1,000 mutations of the BRCA1 gene, many of them associated with increased risk of cancer, particularly breast and ovarian cancers in women.

THE HUMAN GENOME PROJECT BEGINS

Beginning in 1984, the *U.S. Department of Energy* (DOE), *National Institutes of Health* (NIH), and international groups held meetings about studying the human genome. In 1988, the *National Research Council* recommended starting a program to map the human genome. Finally, in 1990, *NIH* and *DOE* published a plan for the first five years of an expected 15-year project. The project would develop technology for analyzing DNA; mapping and sequencing human and other genomes—including fruit flies and mice; and studying related ethical, legal, and social issues.

FIRST BACTERIUM GENOME SEQUENCED

Haemophilus influenzae (HI) became the first bacterium genome sequenced. In May 1995, it was demonstrated for the first time that random "shotgun" sequencing could be applied to whole genomes with speed and accuracy. The method used to sequence HI has been used to sequence the genomes of many organisms.

BERMUDA PRINCIPLES

At a 1996 summit in Bermuda, leaders of the Human Genome Project agreed that all human genomic sequence information generated by centers funded for large-scale human sequencing should be made freely available and in the public domain within 24 hours after generation. The "Bermuda Principles" were drafted to encourage research and development and to maximize the Human Genome Project's benefits to society. These principles reshaped the practices of an entire industry and have established rapid prepublication data release as the norm in genomics and other fields.

In 1998, the entire human genome was finally completed. For more than 10 years, the "race for the human genome sequence" embodied the tensions and excitement of scientists' efforts to map and sequence the genomes of humans and other organisms.

CHROMOSOME 22 DECODED

When the sequence of human Chromosome 22 was first reported in 1999, it was the longest, continuous stretch of DNA ever decoded. Chromosome 22 was chosen as the first of the 23 human chromosomes to decode because of its relatively small size and its association with several diseases. Seeing the organization of a human chromosome for the first time at the base-pair level paved the way for the rest of the Human Genome Project. Sequencing Chromosome 22 was an international collaboration between scientists in the USA, England, Japan, France, Germany, and China.

In 2001, the Human Genome Project international consortium published a first draft and initial analysis of the human genome sequence. A wealth of information was obtained from the initial analysis of the human genome draft. For instance, the number of human genes was estimated to be about 30,000 (later revised to about 20,000). Researchers also reported that the DNA sequences of any two human individuals are 99.9 percent identical.

In 2003, the Human Genome Project's ambitious goals had all been met or surpassed. The sequences produced by the Human Genome Project covered about 99 percent of the human genome's gene-containing regions. Not only was the project finished two-and-a-half years ahead of time, but it was also significantly under budget. In addition to helping researchers better understand the meaning of the human genetic instruction book, the project successfully undertook a wide range of other goals: from sequencing the genomes of organisms used in disease research, to developing new technologies for studying whole genomes.

The Human Genome Project has been compared to the moon-landing project as an outstanding scientific achievement of humankind. ❀

EXTRACTED FROM THE GENETIC GENEALOGY STANDARDS

Limitations of Y-DNA Testing. Genealogists understand that Y-DNA test results reveal relationships among testers through their direct paternal lines. However, identification of the exact relationship or most recent common ancestor (“MRCA”) cannot be determined by YDNA test results alone.

Limitations of mtDNA Testing. Genealogists understand that mtDNA test results reveal relationships among testers through their direct maternal lines. However, identification of the exact relationship or MRCA cannot be determined by mtDNA test results alone.

Limitations of Autosomal DNA Testing. Genealogists understand that autosomal DNA test results, alone, can be used to confirm or deny first degree relationships with certainty (parent/child or full siblings). Genealogists understand that analysis of genealogical relationships beyond the first degree requires the combination of DNA test results and traditional genealogical records.

DNA as Part of Genealogical Proof. Genealogists understand that no single piece of evidence, including evidence gathered from DNA testing, alone constitutes genealogical proof. Establishing genealogical proof requires thorough research in reliable relevant records, complete and accurate documentation and source citation, analysis and correlation of all evidence, resolution of conflicts caused by contradictory information, and a soundly reasoned written conclusion. For more information, see the Genealogical Proof Standard <www.bcgcertification.org>.

Citing DNA Test Results. Genealogists understand and use the current recommended minimum standards for citing DNA test results in reports to clients or in works of scholarship. Guidelines are currently being drafted and will be found at <www.GeneticGenealogyStandards.com> when completed.

AUTOSOMAL DNA CAN BE A GENEALOGICAL GOLD MINE

By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

Autosomal DNA testing is the newest DNA testing tool in the genetic tool box. The great thing about our autosomal DNA is it covers both our paternal and maternal gene lines. We all received one-half of our DNA from each of our parents. What we don't know is which part each child receives. Only identical twins receive the same genes from each parent.

When two people who have been tested find they have the same chromosomes, it proves they are related. However, it doesn't identify which line that DNA came from without an ancestral paper trail for both individuals. How easy it is to connect to another individual depends on the records, or paper trail, each individual has available.

The more people who are tested in a family, the easier it is to figure out which chromosomes came from which parent. Also, the more DNA genealogical testing companies a person's DNA is tested with, the more likely they will find matches.

To be frank, understanding all the information provided by an autosomal DNA test is not easy. Fortunately, the DNA testing companies are getting better all of the time at identifying the likelihood of a specific relationship. Using *Family Tree DNA* (FTDNA) as an example, the most closely related individuals are shown at the top of the Family Finder Matches. A very close match is listed as 1st cousin, Half Sibling, Grandparent/Grandchild, Aunt/Uncle, Niece/Nephew. The listing also shows the name of the matching person, the date the match was identified, and other information which they may have concerning the other individual such as email address, notes which the person left, their family tree, and other people you and that individual have in common.

The next level of matches is 2nd cousin/4th cousin. It is harder to identify the exact relationship at this level, but not impossible. Beyond that most people consider too hard to connect to and don't even bother.

Unfortunately, not everyone tested has put their family tree on the site. Either they don't want to share their tree or for some other reason—such as adoption—they don't have a family tree.

In all matters relating to DNA testing I am the contact person for my husband, Sid, and my great-grandson, Korey, my granddaughter McKenzie, and myself. I will soon be the contact person for another member of the BROWN family. None of these people so far, are interested enough to get involved with the test results. They much prefer me to do the work and tell them about it. Following are some examples of how I have used and been involved with autosomal DNA testing. Each of the examples answers a genealogy question.

WHO WAS MY BIRTH FATHER?

In 1998, when my granddaughter, McKenzie, was 16 she got pregnant and wasn't really sure which one of two fellows she was seeing at the time was the baby's biological father. Kenneth SMITH obviously had a very European ancestry, and Daniel AHMED definitely had a mixture of European and Middle Eastern ancestry.

McKenzie chose to keep the baby boy, Korey, and listed Daniel AHMED as his father on his birth certificate. McKenzie and Daniel both believed that Korey was Daniel's son, and Daniel treated him as his own.

It was hard to tell by looking at Korey if Kenneth or Daniel was his biological father, as he looked more like his mother than either of the men.

Unfortunately, shortly before Korey was born Kenneth was killed in a single car auto accident. His mother moved away from the area shortly after the accident. Therefore, all contact with his family was lost.

I visited them shortly after Korey was born and, being a good genealogist, asked Daniel questions about his parents and grandparents. Unfortunately, his mother had married his father when she was a teenager and had divorced him within the first year. All contact with the AHMED side of his family was lost. However, Daniel was able to tell me about his mother and her brother which gave me her maiden name. He did tell me he had a half-sister, but he wasn't close to that part of his family as he didn't like his step-father.

At the time McKenzie didn't want me to pursue the issue, so the information went in a file and sat there for years. When Korey was 16 he started asking questions. By then Daniel was not in the family picture, and McKenzie didn't want any contact with him. To help identify Korey's birth father we had Korey's Y-DNA test done, but got nothing conclusive from that except many of the matches had Middle Eastern surnames.

To carry the issue further for Korey, I suggested that he take an autosomal DNA test to see which of the men was most likely his father. The autosomal results came back showing at least one-third of his DNA was either Middle Eastern or Central/South Asian, indicating more than likely Daniel is his biological father. I have since connected through the Internet with Daniel's half-sister.

Is Sid descended from an Indian maiden?

Years ago the story was passed down to me from Sid's maternal side of the family that his 2nd great-grandfather, James E. SCOTT, may have married an Indian woman. James was probably born in Indiana about 1829. He had married Betsy MORGAN and had a son, John Walter SCOTT, born 6 June 1849 in Columbus, Ohio.

James E. SCOTT was sent to prison in Jackson, Michigan, in 1855 for murdering their two-year old daughter. According to the family story, in 1868 John Walter SCOTT was taken sick and was not expected to live. When James received the news he escaped from prison and was shot in the leg. He was returned to the prison where he died from the injury. The family said that John Walter SCOTT went to live with his grandmother on the reservation.

I spent years trying to find the ancestry of Betsy MORGAN or a link to an "Indian lady". Last year Sid agreed to have his autosomal DNA tested, and the results indicate he has no American Indian ancestry. Though I know the tests are not sophisticated enough to prove he definitely doesn't have any American Indian ancestors, I have quit looking for one until a test proves otherwise.

Who are Regina's birth parents?

Sometimes you have no idea where something like a DNA test will lead your research. This happened to me on 24 January 2016 when I received an email from Brenda, whom I had never heard of. It reads:

> Subject: DNA match to Regina (last name omitted for privacy)
>
> Hi, I am doing genealogy research for a friend that is adopted and K. AHMED is a very close match. She was born March 26, 1969 in Odessa, Texas. Do you know of anyone in your family that gave up a baby for adoption or lived in the area at the time? We would greatly appreciate any info you might have. You are our closest match so far! Thanks, Brenda

WOW! Here she is looking for information about the ancestry of my great-grandson and I don't have real solid proof of who his birth father is. I did some research on that side of the family, but didn't get very far. Also, his mother, McKenzie BULLOCK, knows very little about her father's family since her parents, Tracy and Clois, were divorced before she was born.

I sent Brenda what I knew of Korey's ancestry which consists of a short list of surnames. Brenda had been working with Regina for a while and from Regina's DNA matches she thought they had found a possible connection to a specific BULLOCK family in Texas. She sent me a lot of questions about Korey's "BULLOCK" line. I forwarded the questions Brenda was asking to Tracy and McKenzie. For a week or more we sent questions and answers back and forth daily. Brenda found Clois' family in some records I hadn't located, and I forwarded those to McKenzie.

Then, in one of my conversations with McKenzie she told me ever since we had Korey's autosomal DNA test, she was getting more interested in her ancestry and the ancestry of her children. She had even been in contact with her father, his sister, and her older half-sister. This was the first contact with her father she had had in years.

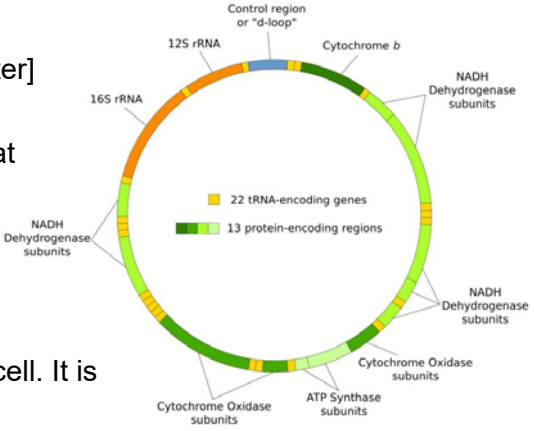
From all the work Brenda was doing with Regina, and what I had passed along from McKenzie, Brenda asked if McKenzie would ask her father if he might have had a relationship with a girl in high school who may have gotten pregnant and given the child up for adoption. When McKenzie asked him, he said yes. He said when he was about 18, he went with a girl who was 16. He graduated and moved away, but heard the girl was pregnant and gave the baby up for adoption. This information led to more questions and McKenzie has now had her autosomal DNA tested. We are waiting for her test results to be put online by FTDNA. This will probably prove McKenzie is Regina's younger half-sister. Hopefully, Clois will remember the name of the girl he was with in high school, and Regina will have found her birth parents.

CONCLUSION

You may use DNA to find answers to your genealogy questions, and you may find you are the answer to someone else's genealogy questions. You never know what DNA will prove or disprove. ❀

MITOCHONDRIAL DNA

By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]



The Wikipedia definition on Mitochondrial DNA (mtDNA) is "the DNA located in mitochondria, cellular organelles within eukaryotic cells that convert chemical energy from food into a form that cells can use, adenosine triphosphate (ATP). Mitochondrial DNA is only a small portion of the DNA in a eukaryotic cell; most of the DNA can be found in the cell nucleus and, in plants and algae, also in the plastids, like chloroplasts."

Unlike Y-DNA or atDNA, mtDNA is not located in the nucleus of the cell. It is not in twisted pairs as atDNA is, but is a circle formation.

When considering mtDNA for genealogy, we are generally looking for two things: the first is the link to our close female ancestral line, and the second is our very distant female line through our haplogroup. Because females generally don't pass their surname to their children, the process for genealogy is nothing like using Y-DNA or atDNA. In general, mtDNA is beyond our capability to carry our female surnames back in time. However, if you are trying to connect a woman to another individual in their direct maternal ancestral line, this test will prove they are related. It will not tell you how they are related other than through their female line of descent following your mother's maternal line of descent.

CONCLUSION

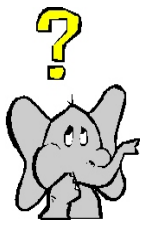
The only mtDNA genealogy testing company today is *Family Tree DNA*. For what you can gain for your genealogy from mtDNA, I don't think it is worth the fee. However, if you are really interested in your mtDNA haplogroup then the mtDNA test is helpful. ❀

INTERACTIVE MAP OF THE ORIGINS OF EUROPEANS

By Barbara A. H. Nuehring [From the Spring 2016 SKP Genies Newsletter]

Once you receive the results of your DNA test and know your haplogroup, you will know the origins of your genetic line. Now you can see on a map where your long-ago ancestors originated. The European History Interactive Map at <www.worldology.com/Europe/europe_history_lg.htm> shows the evolution of ethnic groups and nations. You can also see migration patterns, timelines of those migrations, the development, growth and demise of empires/countries along with ancient and modern political boundaries.

As with all Internet sites the data is not infallible. If particular pieces of information are vital to your research, check other sources of information for accuracy. ❀



If America goes to a full single payer health care system, no one will ever have to worry about BIG business or BIG government having our DNA and health records. They will have it all by default. ❀

Y-DNA Success Stories

By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

The question I get asked the most about DNA is "Does this DNA thing really work?" The answer I give is, "Yes and no." It all depends on what you are looking for, if you are looking in the right place, and how much information you already have. Following are two examples of how I have used Y-DNA tests.

Y-DNA Projects

There are hundreds, maybe even thousands, of Y-DNA Projects in *Family Tree DNA* (FTDNA). In the early days of genetic genealogy I had a genealogy problem I couldn't solve through the paper trail. My problem was on my mother's maternal WALKER family. I knew they were from Charles City County, Virginia, and the paper trail said they had lived there since the mid-1600s. I had exhausted all I could locate in the Charles City County courthouse, the Virginia State archives in Richmond, Virginia, and the Family History Library in Salt Lake City, Utah.

The time frame in question was following the American Revolution to about 1830. This is what many genealogists call America's history hole. That is, many areas kept very poor, if any, records. Lots of information was never recorded, or as was the case in Virginia, I was dealing with a burned county courthouse. Only one document suggested my 4th great-grandfather was Henry WALKER, Jr., leading me to assume, right or wrong, that his father was the Henry WALKER I had found in only one record. There was nothing listing his children. He was the only Henry WALKER living at that time in Charles City County, Virginia.

I was able to carry the elder Henry WALKER back to the family of Alexander WALKER who was in James City County, Virginia, in 1662. James City was the county to the east of Charles City County. Alexander was said to have had three sons, James, Henry and David. David WALKER's line had been followed by genealogists for years, as they were a family of doctors from Richmond and quite wealthy. James and Henry were unknown to me until I started my search, and I found very little on Henry's line, but James' line matched up with my Henry line.

I decided I wanted to see if I could get a male cousin to have his Y-DNA tested through *Family Tree DNA*, but the only one I found who would do it needed help financing the test. I wrote to all of the women cousins I could find, and we each chipped in $10 and paid for his test. When his test came back it didn't match the family of WALKERS I thought we would connect to from New Kent County, the county just north of Charles City County, but was another branch of WALKERS.

About a year later a descendant of David WALKER, James' brother, had his Y-DNA tested at *Family Tree DNA,* and he was an exact match to my cousin. Even without a full valid paper trail, I did find I was on the right track. Since then someone from Henry WALKER's family took the Y-DNA test and, as a result, we now know there were three sons of Alexander as earlier recorded without sources.

What's in a name? Not much!

Through many years of genealogical research I have proved to a degree on paper that my husband, Sid's, surname name should have been WINN, not BROWN. When I started this search I had only small scraps of paper from the family with information about his BROWN ancestors. Sid's grandfather's name was William B. BROWN. William named his first son Sidney Albert BROWN. Sidney named his first son Sidney James BROWN. The family papers did say William was from Radok, Missouri, and that his family lived in Lafayette County, Missouri. I have never found Radok, Missouri, anywhere. One day in a conversation with Sid's Aunt Nettie, she said she had visited her cousin Thelma DYSERT in Dover, Missouri.

She told us Sid's great-grandfather had changed his surname from WINN to BROWN. The paper listed his great-grandfather as James M. BROWN and his great-grandmother as Georgia Ann HAMPTON. However, none of these scraps of paper listed any of William's brothers. They showed only three sisters with their married names. Even then, one of the sisters was omitted from those documents.

Census records didn't help because there was no James M. BROWN in Lafayette County, Missouri, at the right time with the right wife and daughters, and a son named William B. BROWN.

The first paper break through was found in the History of Lafayette County, Missouri, by William YOUNG. This book contained a short history of the James M. WINN family. This story named James' wife as George Ann HAMPTON and listed four daughters, of which two matched the names of the three girls Aunt Nettie showed on the documents she gave me. However, there wasn't a William B. BROWN or WINN in the list. There was, however, an Albert Sidney Johnston WINN listed.

Another trip through the census records for the family of James M. WINN showed a son, Sidney WINN was born the same year as William B. BROWN. Still not proof, but a very good lead.

Before Sid and I went full-timing in 1992 I had gathered photos of William B. BROWN and had taken a few with me in the RV. In 1995, while traveling through Missouri I, of course, had to go to Dover to visit his cousin, Thelma. I had found Thelma's address in the online phone directory and called to make arrangements to meet her.

I also had with me a photo of the couple I suspected were William's parents, since the photo had Mom and Dad written on it and came from the BROWN side of the family. There was also a photo of two women taken in 1927 cutting a ribbon for the dedication of the DAR Madonna and Child monument in Lexington, Missouri. That photo had the names of the two women as Mrs. WINN and Mrs. WALSON. I was pretty sure one of the women in that photo was the same one in the photo of Mom and Dad.

The morning we arrived at Thelma's house I had those two photos, and one of William B. BROWN dressed in the same red vest he wore most of the time, looking as dapper as could be.

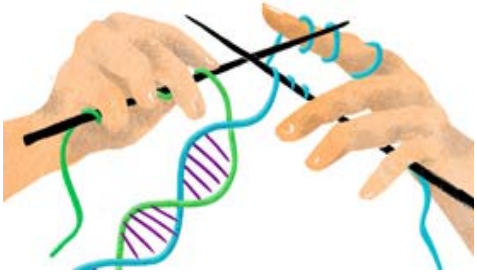
I asked Thelma a lot of questions and then I brought out the three photos. I showed her the one of William BROWN and she said "By golly that's Uncle Sid WINN. He looked just like that the last time I saw him." Well, you could have knocked me over with a feather. I had my proof, so to speak. At least it was enough for me to be sure I was on the right track.

Then I showed her the one of Mrs. WINN and Mrs. WALSON cutting the DAR ribbon, and she about fainted right in front of me. She said, "Hold on a minute. This week's garbage hasn't been picked up yet. You won't believe what was on the front page of this week's newspaper." When she came back from the garbage there was a picture of the same two women taken the same day from a slightly different angle with information about who they were and the article gave their names as Mrs. Georganne WINN and Mrs. WALTON. The article said they were cousins. Their names were spelled differently than I had, but it was the same two women. This information seemed to seal the deal on proof.

In 2009, Sid had his Y-DNA tested. When the test came back, most all of his matches had the surname WINN. Yes! I had proved the connection with both paper and DNA. This BROWN family really is a WINN family. Just to clear things up, George Ann WINN'S name has several spellings in different documents. Her death record lists her as Mrs. James WINN, not Mrs. George Ann WINN.

Y-DNA TESTING IS WORTH IT WHEN WORKING ON DIRECT MALE LINES

DNA tests can be used to answer a variety of questions. Even if you need help paying for the test, it is worth the effort to keep your research on the right track. ❀



DNA BREAKTHROUGH OF THE YEAR

Science Magazine announced the 2015 "Breakthrough of the Year" in the 18 December 2015 issue ("Making the Cut", Science, v. 350, issue 6267, pp1456—7). The discovery and development of a tool for editing the genetic code is being hailed throughout the scientific world and is widely expected to merit a Nobel Prize. CRISPR, an acronym for "clustered regularly interspaced short palindromic repeats", is a technology for changing out individual nucleotides in a DNA sequence. This capability foretells the possibility of correcting the codes that lead to genetic disease. ❀

Downloading DNA Raw Data Files

By Norman Cutshall

[From the Spring 2016 SKP Genies Newsletter]

Once you have done an autosomal DNA test, you may want to download a copy of your raw data from the testing company. Perhaps you plan to transfer the data to another site such as *Gedmatch*, *DNALand* or *Promethease*, for further analysis; or you may simply want to be sure the record is preserved and in your care. At least one company has shown they cannot be trusted to save your data. When *Ancestry* ended their Y-DNA and mtDNA testing, they destroyed the files of previous testers.

Each of the big three testing companies—*23andMe*, *AncestryDNA*, and *Family Tree DNA* (*FTDNA*)—keeps a record of your test results in their database so they can be compared to new customers. Each company allows you to download your data to your own computer so you can share or preserve the results you have bought and paid for. The procedures for downloading vary from company to company and are not always intuitive. The following describes the step-by-step procedure for each of these companies. It works for *Windows 10* users running *Google Chrome*. Different operating systems or browsers may vary slightly.

23andMe

Log in to your account and go to the HOME page.
Navigate to the TOOLS page. You may have to scroll right.
Click on DOWNLOAD on the upper right.
You will be asked to identify yourself again.
Select ALL DATA and click on DOWNLOAD at the bottom of the page.
Your data will download as a zipped file into your DOWNLOADS folder with a file name of "genome_yourname_.zip".

NOTE: *GEDMATCH* provides a one-step helper for transferring *23ANDME* files to their site.

Family Tree DNA

Log in to your kit and go to the *MyFTDNA* page.
In the *FAMILY FINDER* window click on DOWNLOAD RAW DATA at the lower right.
You will see four options and will select two of them, one at a time.
Click on BUILD 36 AUTOSOMAL DATA.
Your data will download as a zipped file into your DOWNLOADS folder under the name "kitnumber.zip".
Repeat for the "BUILD 36 X DATA" file.
Your data will download as a zipped file into your DOWNLOADS folder under the name "kitnumber.zip".

AncestryDNA

Log in to your account and go to the DNA RESULTS SUMMARY.
Click on SETTINGS and then GET STARTED.
You will be asked for your *Ancestry* password and issued a warning that *Ancestry* will not be responsible for what you do with the results. This may seem ironic since they have already secured your permission to use the results as they see fit.
You will be directed to your email inbox for a message from *Ancestry*. It may take a few minutes to arrive.
The message will ask if you still want to download. Click YES.
Your data will download as a zipped file into your DOWNLOADS folder.

Caution: Do NOT unzip the downloaded file because most uploads call for zipped files. Once unzipped they will not work for downloads requiring the zipped files for further analysis.

Consult the destination site you want to use for uploading instructions. You will have to know the location and name of the file(s) you have downloaded.

HINT: I like to save the zipped file with a name I can easily remember.

We have no idea where all of the new discoveries with DNA will take us. Therefore, it is suggested you save your raw data files to a jump drive or other medium of your choice. Since companies come and go, these files may be passed to—and used by—other family members in the future.

CONCLUSION

Once you have worked with DNA files and have found or been found by a relative, you may choose to be the contact person for the DNA kits of other family members. Yea! It sort of works that way. Because you will be working with multiple kits, you may consider creating a folder for all of your DNA kits with individual folders under that folder for each of the raw data files you are working with. ❀

GEDMATCH

By Carolyn H. Brown

[From the Spring 2016 SKP Genies Newsletter]

GEDmatch is a match-making service for all of your possible cousin connections. If you have only tested your atDNA with one genealogical DNA company and want to match your DNA against those people who have tested their atDNA or X-DNA with another company, then *GEDmatch* is for you.

Since *GEDmatch* is run by volunteers and supported by donations, patience is necessary. To use *GEDmatch* you must first register. It is easy and free, so there is no reason not to join. This site accepts "raw" DNA data for the top three US-based genetic genealogy testing companies: *Family Tree DNA* <www.familytreedna.com>, *23andMe* <www.23andme.com>, and *AncestryDNA* <dna.ancestry.com>. Each of these companies allows you to download your raw DNA data. Don't unzip the file—see the article above by Norman Cutshall "Downloading DNA Raw Data Files."

Once you have registered with *GEDmatch*, you will receive an email to verify you are a real person. Follow the instructions in the email to access your profile.

Start by clicking on the link for your testing company under the FILES UPLOADS sections of the website. Each upload link will take you to the company's *GEDmatch* page where you will find detailed instructions on where to retrieve your raw data and how to upload it to *GEDmatch*.

Following the instructions specifically is very important because if you don't, your data may not upload properly and you will have to start the process over. If you are working with multiple kits, you will need to create a new alias for each individual kit so you can keep them separated in your account.

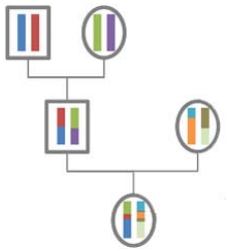
As you are filling out the online form, be sure to check the YES button to give *GEDmatch* permission to make your data available in the site's public database. If you don't, you won't be able to analyze your DNA against other matches in the database. If you forget, you can edit your settings later under the YOUR DNA RESOURCES section.

Once your data is uploaded you will need to wait until it is processed before you can view your matches. Under the ANALYZE YOUR DATA heading there are tools for finding matches in the public database. There are quite a few options, but they are pretty straight forward. The ONE-TOO-MANY DNA COMPARISON tool allows you to choose to show the autosomal or X chromosome results. You will receive a spreadsheet of matches from all three companies. You can do further analysis using the comparison tools.

As a new *GEDmatch* user, you may want to check out the LEARN MORE section on the main page. Use the forums to get answers to your questions. Some members run ancestor projects you can join and follow their forums.

Just because you have tested with one company, it doesn't mean you can't compare your data to people who tested with the other companies. ❀

Using DNA to Prove a Connection



By Jeanette Fisher [From the Spring 2016 SKP Genies Newsletter]

I grew up never knowing my biological father and was always curious why he and my mother didn't stay together after my birth. Several years ago I learned he passed away in 2001. I was saddened to think I never had the opportunity to meet him. However, reading through his obituary I learned he had ten other children. Soon I was in touch with them. All welcomed me warmly except one, who vehemently denied I could be related to him. At that point I turned to DNA.

During a family gathering I asked one of my newly-discovered half-brothers if he would be willing to take a DNA test. He has an interest in genealogy and immediately agreed. After receiving the results, we were elated to learn that indeed we matched as half-siblings. I knew we would! Unfortunately, the one who denied me is still in denial.

A Second DNA Challenge:

Another relationship I'm hoping to prove with DNA is that of one of my half-sisters and her biological father who we are certain is not my father. Unfortunately, we don't know of any male relatives she might have, so this is my plan: Figure out all those with whom we both match in our atDNA results; eliminate all those we both match in our mtDNA; and any remaining matches she has in her atDNA should be her paternal line. ❀

DNA Testing With the Big 3

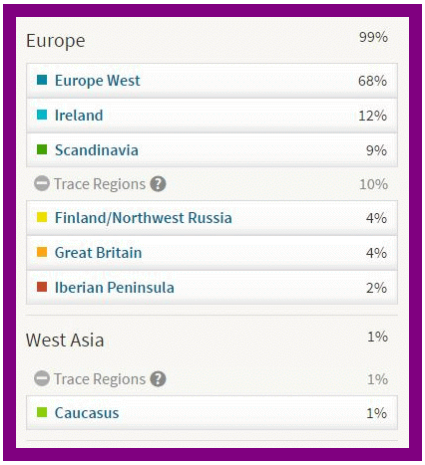
By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

Norman Cutshall explained the basics of the "Big 3" companies in his article "Genetic Genealogy: Using DNA in Your Research" on page 15. Each company has different levels of reporting. Therefore, the information you will get from one company will not be exactly like the information you will get from either of the others, as shown in the two ethnic charts for the same individual below. We will attempt to answer the question "Once you have your DNA tested, what will you get that you can work with?"

23andMe <www.23andme.com>

This is the only company of the three top genealogy DNA testing companies which can give you an inherited "Carrier Status Report" that indicates what possible genetic variant you are carrying. Carriers don't necessarily have a genetic condition, but they can pass a genetic variant down to their children. If both parents are carriers, there is a 25% chance their child will have the condition. *23andMe* also provides a "Wellness Report" so you can make healthy choices, and a "Traits Report" which you can explore to understand what makes you unique, from food preferences to physical features.

Like the other two companies, *23andMe* has an "Ancestry Report" so you can see what your DNA can tell you about your family history. Their family history reports include; (1) Ancestry Composition; (2) Maternal and Paternal Lineage; (3) Neanderthal; and (4) DNA Relatives tool. Their results show matches and provide the option to invite matching people to compare ancestry data using the company's email system. However, since most of those tested individuals are looking for health information they may not reply to people interested in their family history. *23andMe* uses a saliva sample for their test and the sample is destroyed. They only test autosomal DNA and their testing kits are $199.00.



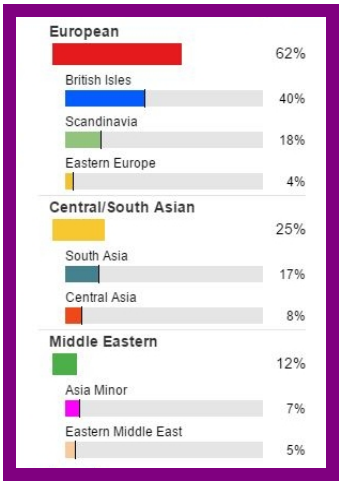
Ancestry DNA Ethnic Chart

AncestryDNA <www.ancestrydna .com>

This service connects you to other close matches as well as family trees in their database. The relationship range is shown so you can see how your matches may be related. The relationship ranges are: (1) parents, siblings,

grandparents, down to first cousins; (2) 2nd to 3rd cousins; and (3) 3rd to 4th cousins. Few tools are provided for analyzing the results and most users end up copying their results elsewhere for further study.

Generally it is hard to find the shared ancestor with more than the 1st or 2nd cousins level. *AncestryDNA* provides an ethnic percentage chart and a map indicating where your distant ancestors may have lived. *ANCESTRYDNA* requires a saliva sample and does not preserve the sample. The only DNA test they offer is the autosomal DNA test for $99.00.



MY GREAT-GRANDSON'S FTDNA ETHNIC CHART

FAMILY TREE DNA *(FTDNA)* <www.ftdna.com>
This one provides the best set of "tools" to analyze the results and it includes the email address of the account manager, who may or may not be the person tested. *FTDNA* uses a cheek swab sample which is easier for some people to use. The sample is preserved unless the user requests that it be destroyed. *FTDNA* also allows results from other companies to be uploaded. They offer both Y–DNA and mtDNA test, which the other two companies don't.

For your Y-DNA, *FTDNA* offers several markers levels and "Surname Projects" which only Y-DNA-tested individuals may join to find others with matching Y-DNA markers. Unfortunately, they don't have a surname project for every possible surname. However, if you do find a surname project you can join, it may help you connect with others researching the same families you are researching.

FTDNA's "Family Finder" atDNA test results are similar to those offered by *AncestryDNA* with more in-depth reporting. *FTDNA* provides groups where families can set up funding for others to take the test who can't afford the test themselves. With the atDNA test they provide: (1) Matches—you can select the known relationship to any individuals you match, email a match, leave notes, view the family tree of a match, and run "in common with" matches; (2) Chromosome Browser—to see your shared segments of each chromosome; and (3) My Origins—to view your ethnic makeup and a map showing where your distant ancestors may have come from.

There are several DNA tests offered by *FTDNA* as well the option for individuals who have tested with the other two companies to import their raw data to *FTDNA* at a lesser charge than having the DNA test repeated. The atDNA "Family Finder" test is $99.00.

CONCLUSION
If you can only afford one test, then go with *FTDNA* as you will get more for your money. If you can afford two tests start with AncestryDNA, because the cost to import your data to *FTDNA* is less than repeating the test. The professionals suggest taking all three tests. ❀

BEGINNERS' PITFALLS FALLS

I AM AFRAID OF HAVING MY DNA TESTED BECAUSE I DON'T KNOW WHAT THEY WILL DO WITH IT.

By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

I used to worry too, until one day I realized every time I have my blood drawn or take a urine test the doctor or hospital has my DNA and in much larger quantities than the genetic genealogy DNA testing companies. With our current government, I asked myself what have they already done with my DNA? I am on Medicare, so they have all of my medical records for the last 15 years. They know all of my medical issues, so what else can they do? I figure the government can do a lot more than any genetic genealogy company, so why worry?

After reading the stories I have submitted to this issue, wouldn't you like to find out for your family what I have found out for Sid's and my families? Do you have a dead end that DNA may get you past, or are you researching like I did for years for that Indian lady who didn't exist? Do you have a hole in your paper trail that DNA may get you past so you will know if you are on the right track or not? So go ahead, jump in the gene pool with the rest of us and open some of those closed doors. Happy swimming, Carol. ❀

Are You Lost in Your Autosomal DNA Map?

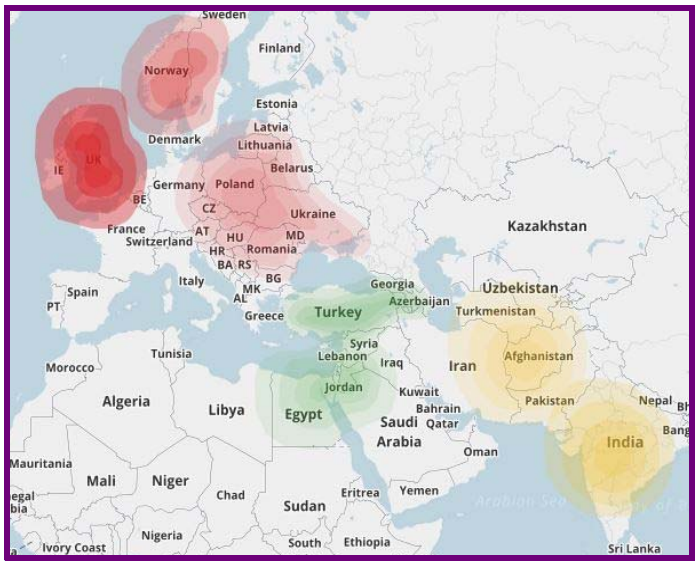
By Carolyn H. Brown [From the Spring 2016 SKP Genies Newsletter]

When you look at your atDNA map supplied by the genetic genealogy DNA testing company, is it like following a road map of the Arizona desert? Does the DNA map from one company show you something different from another company? You are not alone in this quandary.

The results of tests come in one big pile, with no distinction as to which piece of DNA came from which of your ancestors. The DNA test provides two different kinds of results: matches and ancestral origins. The geographical results are often referred to as your admixture results.

Your DNA map verus your genealogical pedigree chart

Your genealogical pedigree chart contains every ancestor you have discovered. Your DNA map contains only one-half or less of the ancestors on each side of your pedigree chart. Your siblings DNA maps may be somewhat different from yours. However, the pedigree charts match exactly.



The map representing my Grandson's FTDNA Ethnic Chart shown on page 18

Differences in the DNA testing companies

Each of the companies divide up the world into populations differently. For example, *Ancestry DNA* separates British and Irish separately, *23andMe* groups them together, and *Family Tree DNA* includes them in Western and Central Europe.

Each company has a unique mix of reference population samples—they compare your DNA samples to different pools of data. Therefore, the results are different for each company. Since the tested pools contain mostly individuals with European ancestors, the information provided for those having African, Asian or Middle Eastern origins won't be as usable because the comparison pools are so small.

Native American ancestry issues

Have you always heard the story that you have a Native American ancestor and you want to use DNA to prove it? Because you received only one-half of each of your parents' DNA, you may or may not have received DNA linking to your Native American ancestors. The further back your Native America DNA was last initiated into your ancestry, the less likely you received some of that DNA. Beyond five generations, chances are you won't have inherited enough of any one ancestor's DNA to be confident a test will detect it. Therefore, if the Native American designation shows up on your test, you have a Native American ancestor. If there is an absence of Native American DNA in your results, it doesn't mean you don't have an American Indian ancestor.

Conflicting Maps

I have locations in my research that aren't on my DNA map! I have locations on my DNA map which I haven't found through research!

Many of us have this situation. Say, for instance, you traced an ancestor back to Norway, but while you have no designation on your map for Norway, you do have ancestors from Germany. It is most likely the ancestor didn't carry any DNA associated with Norway, but the individual's country of origin was Germany.

Conclusion

You don't need to be an archeologist or a population geneticist to understand these ethnicity maps, but it wouldn't hurt! We are using genetic data from modern populations to try to reconstruct what happened in the past, anywhere from 500 to 75,000 years ago or more. It's like putting together a 1500 piece puzzle without all of the picture. There is an excellent article addressing this topic, "Lost in the Shuffle" by Diahan Southard in the July/August 2015 Family Tree Magazine on pages 20-25. ❀

BOUSE GENIES NEWS

Another season is coming to an end and many of our members have already headed to cooler places. During the season, as usually happens, we lost a few members and gained a few new ones. Unfortunately, this season our loss was greater than our gain. The flu this season hit our membership hard and some were unable to attend as many meetings as they would have liked to. We missed all of you who were unable to be with us.

MEMBERSHIP DUES RAISED FOR 2017

Because of the lack of attendance at the workshop combined with the lose of members, we voted to raise the annual dues to $20 per member and $30 for multiple family members in the same household. Anyone who prepaid their dues for the next year or more before February 2016 will be grand-fathered in on their dues until they are scheduled to pay again.

GENEALOGY WORKSHOP 2016

Our 2016 Workshop was held on 26 February at the Bouse Boosters Building. We had 16 members pre-register, and one (1) non-member register at the door. Three (3) members who had registered were unable to attend. We had five (5) classes with a short break between each class. The Bouse Boosters prepared our lunch bags which everyone agreed was very good.

We had time between classes and at lunch to talk about the classes, and share other stories. From the general discussion we found that most people thought it was the best workshop we have had. Having time to discuss the classes and share stories made this workshop unique.

GENEALOGY WORKSHOP 2017

In March we voted to hold the workshop in 2017 here in Bouse at the Booster Building. Now we need our members to get busy and prepare some new classes for 2017 workshop. We also need your input as to the class themes you would like to see at the 2017 workshop. Is there a presentation by one of our members which you have seen in the past which you would like to see repeated at the workshop? Please let us know.

Following the workshop we realized that in order to maintain the current budget we needed to expand our annual income. The workshop brought in $150, which was half of the other workshops we have held. It takes a lot of work to put on a workshop, and we didn't have the support from our members for advertising or in attendance. It takes a lot of work to sponsor a workshop and more members are going to have to step forward to help if we are going to continue to have them.

2016 INTEREST QUESTIONNAIRE

In February we were informed that we were not serving our membership well and that we should look at making changes. The 2016 Interest Questionnaire was emailed to all members and to-date have only received five (5) replies. Some individuals who replied do not attend the meetings as they live some distance from Bouse, and therefore are only interested in receiving our newsletter.

Unfortunately, we can't put everything on the website and expect the membership to respond in a timely manner. Many members don't look at the website unless directed to do so. It is important that we hear from each of you to ensure we continue to do the things you particularly like, and that we change the things which need to be changed. Unfortunately, there are conflicts and we will have to go with the majority.

BOUSE GENIES MEETING SCHEDULE CHANGE

Based on the feedback from the questionnaire and other conversations with members, we voted to change our meeting days from every other Friday of the month to the first and third Fridays. The general consciences is that two meetings a month on set days of the month will be much easier to remember than every other Friday.

Therefore, we will be changing our meeting days to start on the first Friday of October and end on the third Friday of April. After working the change in the calendar we will only be having one, or maybe some years, two (2) less meetings per year. The new calendar is attached to this newsletter and will be available on the website.

Genealogy Study Group

Due to the lack of interest the Genealogy Study Group has been discontinued. Should more members be interest we may start-up again.

Legacy Users Group

The Legacy Users Group will continued to be held in the afternoon following lunch on the first meeting of the month. Please feel free to bring all Legacy questions to the meeting. There are no dumb questions, only questions you don't know the answer to. Maybe we can help.

DNA Users Group

We started a new DNA Users Group at the second meeting in January. We also purchased several DNA webinar CDs from Legacy which will be shown at up-coming meetings. The moderator for the group is Norman Cutshall, who is very well versed in the subject and keeps up-to-date on everything happening in the DNA world as it relates to genealogy. The group is open to anyone who has taken or is interested in taking a genetic DNA test. If you are not sure, come join us and see if this new method of finding your extended family is right for you. Thank you, Norman, for stepping forward.

Website updates

We have a fabulous website at <www.bousegeniesaz.org>. However, it is up to all of us to help keep the site updated. If there is something which needs to be updated, please send a message to <bousegenies@gmail.com>.

We are now adding the class handouts to website. If you would like to read the handout for the "Sources – Evidence – Analysis" class, it is available on the Resources page.

If you are using Google Chrome, you may have issues with finding what you want on the site. The problem occurs when you accessed the site before an update is made, and then access it again shortly after the update is incorporated into the page. If you are having issues with it, you will need to go into the setting for Google Chrome and clear the site history. When you access the site again the updates should appear.

Bouse Community Building

We were told by the LA Paz County Supervisors that they would work to get the building open again, but we are not seeing any evidence that they are really working on it. We will keep you posted if and when we get the building back.

Bouse Genies document updates

During the summer the board will be working on the Constitution and By-Laws and Policies and Procedures. We hope to have them approved by the board and ready to present at the first meeting on the fall season. ❀

From the Editor's Desk

By Carolyn H. Brown and Barbara A. H. Nuehring

[From the Spring 2016 SKP Genies Newsletter]

Since we wrote the articles for this edition of the *Bouse Genies Newsletter* we learned *GEDmatch* made a decision to stop accepting *FTDNA* DNA uploads and may remove all *FTDNA* DNA match results from *GEDmatch*. *FTDNA* has threatened to sue *GEDmatch* over claimed privacy issues. Now it looks like FTDAN customers can upload their DNA raw data zip files to GEDmatch.

In the remainder of the 2016 editions we will be taking an in-depth look at three great onsite researching facilities— courthouses, libraries and archives. We know many of you have had experience in using these repositories and hope you will contribute articles about the sources you have found on their shelves and in their vaults.

The next edition of the *Bouse Genies Newsletter* will be published around the time of the summer solstice and will feature articles about researching in courthouses. There are a myriad of legal records created and maintained within courthouses that aid us in finding and understanding our ancestors and their lives. Please take time to share your knowledge of these records, or dealing with courthouse personnel, please send an article to Carol <GenieCarol@gmail.com> at any time, but before the deadline of 1 June. ❀

REMEMBERING A GOOD FRIEND OF THE BOUSE GENIES

Early in the morning on the 25th of February, Lee NUEHRING completed his vibrant life on earth and joined his ancestors in eternal rest. Born Leon Louis NUEHRING in Iowa on 20 February 1934, he was the husband of Barbara Anne (HENKE) NUEHRING, the son of Walter William NUEHRING and Leona Christina POORT and a good friend of the Bouse Genies.

Lee always claimed he had the best career and the best retirement. After three years as a US Army soldier in Orleans, France, doing "machine accounting" he became a Department of the Army Civilian (DAC). Over the next 35 years he had many excellent assignments—his favorites being the US Representative to NATO's Military Budget Committee, the Budget Officer of a major funding program in the Office of the US Army Comptroller, and the Director of Resource Management of Fort Huachuca, Arizona. He retired from US Civil Service in 1991 to work for NATO as the Director of Finance of the Fuel Pipeline Operating Agency for four-and- a-half years. Then began 21 years of fun-filled retirement—the last half of them living the fulltiming lifestyle in a motorhome.

Lee and Barbara were married on 23 March 1991, in the foothills of the Huachuca Mountains, Cochise County, Arizona. Their shared love of travel took them to all seven continents, 71 countries and much of the USA. Lee loved the outdoors, whether it was riding an ATV through mountain forests or the deserts, geocaching or sitting outside the RV reading a book and sipping a glass of scotch or red wine. Until the NUEHRINGs became fulltimers and had limited freezer space, Lee was an avid bowhunter. When incumbent weather forced him inside, he spent time photo-editing hundreds of pictures and making slide shows.

Although he wasn't a family history researcher, he proudly maintained he was a genealogy go-get-her. He knew where the "a" went in genealogist, could explain what a collateral line was and believed Barbara when she said Salt Lake City was on the route between Arizona and Texas or New Mexico and Wyoming. He was also Barbara's "picture Guy" tramping through cemeteries or sitting on a cousin's floor scanning old family photos they didn't want out of their sight. Lee provided Barbara logistical support when she presented genealogy seminars for the Bouse Genies.

Lee never grew old and was quite healthy until he developed a severe case of bacterial pneumonia which, in a three-week period, evolved into acute respiratory distress syndrome (ARDS). Eventually, due to the lack of oxygen, his organs began to shut down. When his heart stopped Barbara was with him. He was cremated and now resides in a red wine-colored urn and forever in

At a computer expo (COMDEX), Bill Gates reportedly compared the computer industry with the auto industry and stated, "If GM had kept up with technology like the computer industry has, we would all be driving $25.00 cars that got 1,000 miles to the gallon"

In response GM posted this reply...

Occasionally your car would die on the freeway for no reason. You would have to pull over to the side of the road, close all of the windows, shut off the car, restart it, and reopen the windows before you could continue. For some reason you would simply accept this. ❀

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Bouse Genies Newsletters

All past and current individual files of the *Bouse Genies Newsletters* and the *2015 Newsletter Index* are available on the *Members Only* page of our www.bousegeniesaz.org website.

However, if you would like a CD containing all of the past newsletters from 2007 thru 2015, you can order it as indicated in the text box below.

What's Happening?

As you spring into your 2016 travel adventures include in your routing a genealogy learning experience.

National Genealogy Society Annual Conference
4–7 May 2016 in Fort Lauderdale, Florida
Info: http://conference.ngsgenealogy.org

The Future of the Past: Genetic Genealogy 2016
2 June 2016 in Burbank, California
Info: www.genealogyjamboree.com/

47th Southern California Genealogy Jamboree
3–5 June 2016 in Burbank, California
Info: www.genealogyjamboree.com/

Genealogy on the Cutting Edge
3–5 June 2016 in Toronto, Ontario, Canada
Info: www.ogs.on.ca/conference

BYU Family History and Genealogy Conference
26–29 July, 2016 in Provo, Utah
Info: http://familyhistory.ce.byu.edu/

Federation of Genealogical Societies Conference
31 August – 3 September 2016 in Springfield, Illinois
Info: www.fgs.org/cpage.php?pt=43

Legacy Family Tree Cruise
2–9 September 2016
Seward, Alaska, to Vancouver, British Columbia
Info: www.legacyfamilytree.com/CruiseInfo_2016.asp

Can't find a conference along your planned route? Don't despair; consider taking virtual courses in the shade of a tree with your feet up or in the comfort of your home or RV.

Family History Expos
Online courses
Info: www.familyhistoryexpos.com/expos

Video courses on CDs
Info: www.familyhistoryexpos.com/shop/index/18/141

Bouse Genealogical Society

September 2016 - August 2017

September 2016

S	M	T	W	T	F	S	
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11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30		

October 2016

S	M	T	W	T	F	S	
						1	
2	3	4	5	6	7	8	BGS Meeting 7th 9:30 - 2 B
9	10	11	12	13	14	15	
16	17	18	19	20	21	22	BGS Meeting 21st 9:30 – 2 B
23	24	25	26	27	28	29	
30	31						

November 2016

S	M	T	W	T	F	S	
		1	2	3	4	5	BGS Meeting 4th 9:30 - 2 B
6	7	8	9	10	11	12	
13	14	15	16	17	18	19	BGS Meeting 18th 9:30 - 2 B
20	21	22	23	24	25	26	
27	28	29	30				

December 2016

S	M	T	W	T	F	S	
				1	2	3	BGS Meeting 2nd 9:30 - 2 B
4	5	6	7	8	9	10	
11	12	13	14	15	16	17	BGS Meeting 16th 9:30 - 2 B
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	

January 2017

S	M	T	W	T	F	S	
1	2	3	4	5	6	7	BGS Meeting 6th 9:30 - 2 B
8	9	10	11	12	13	14	
15	16	17	18	19	20	21	BGS Meeting 20th 9:30 - 2 B
22	23	24	25	26	27	28	
29	30	31					

February 2017

S	M	T	W	T	F	S	
			1	2	3	4	BGS Meeting 3rd 9:30 - 2 B
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	BGS Workshop 17th 8 – 3:30 B
19	20	21	22	23	24	25	
26	27	28					

March 2017

S	M	T	W	T	F	S	
			1	2	3	4	BGS Meeting 3rd 9:30 - 2 B
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	BGS Meeting 17th 9:30 - 2 B
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April 2017

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2	3	4	5	6	7	8	BGS Meeting 7th 9:30 - 2 B
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16	17	18	19	20	21	22	BGS Meeting 21th 9:30 - 2 B
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May 2017

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June 2017

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July 2017

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30	31						

August 2017

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13	14	15	16	17	18	19	
20	21	22	23	24	25	26	
27	28	29	30	31			

Events Notes:
Workshop will be on February 17th at the Booster Club