

Finding Your Genetic DNA Cousins - One Geographic Location at a Time

By Karen A. Melis © 2013

As genealogists, we utilize a number of tools in our genealogist's toolbox. We understand the process as starting with ourselves and working back in time. By completing document searches for birth, marriage, and death records and conducting research on passenger lists, naturalization papers, obituaries, and newspapers, we discover clues as to who we are and where our ancestors originate. Maps help to trace our way back across oceans to our ancestral villages and towns. Studying the history of regions, villages, and churches, we strive to place our own ancestors in context. This process of uncovering our family history is both difficult and complex. Typically, we do not research our family history alone. We often connect with others, including distant relatives, total strangers performing similar research, or those studying common surnames. Genealogists describe very complicated relationships between people using systematic relationship charts. When comparing notes, we try and connect the paper trails via a common ancestor.

The product of these efforts is our family history. The key is locating *evidence* for *each fact* we add to our history or family group sheets. With each supported fact, we learn more about our ancestors. We are comfortable with this process and passionate about filling in all the branches and possible details. How many genealogists readily admit to having lost sleep over missing data or hitting brick walls? Genealogists

take pride in uncovering elusive data and solving complicated family history puzzles. The end product represents not only ourselves but also our ancestors and their heritage.

A genealogist's comfort zone, then, includes finding evidence through a relatively defined process and working to understand complex relationships between members of small to very large family histories.

In May 2000, a new tool became available to the genealogist: the DNA kit. A few years later, Megan Smolenyak Smolenyak coined the phrase *genetealogy* to describe the merging of genetics and genealogy. According to Smolenyak, "A *genetealogist* is interested in using DNA testing to add information to their Family History. Testing is simply the process of determining whether two individuals share a common ancestor by comparing an infinitesimal fragment of their respective DNA."¹ Returning to our genealogist's comfort zone, we now recognize DNA testing as a way of adding *scientific evidence* to support our research.

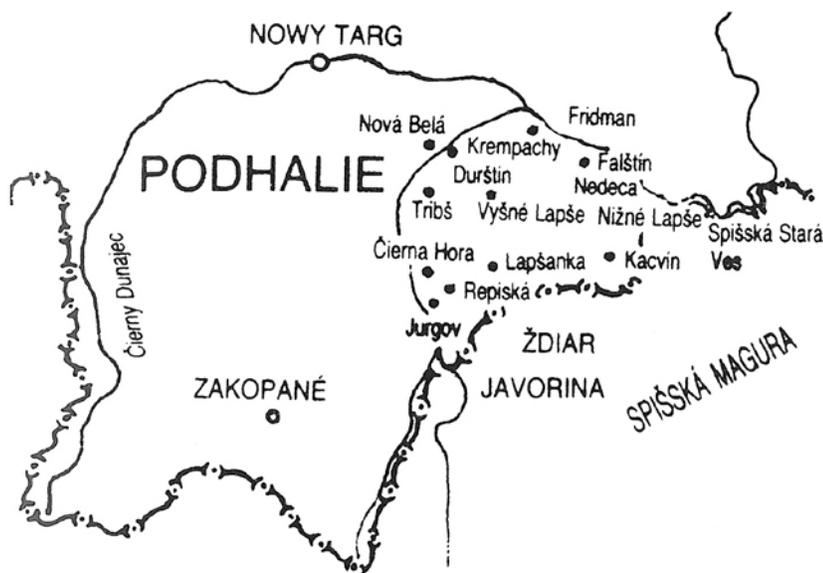
One important fact must be emphasized. Genealogy and DNA testing go hand in hand. You can be a genealogist and never DNA test. However, you cannot effectively understand the genetic matches found with DNA testing without applying genealogy! A number of companies perform DNA testing for genealogical purposes, including FamilyTreeDNA, Ancestry.com, and 23&Me.² The projects and process discussed below are with FamilyTreeDNA.com.³

A genealogist and genetealogist, then, are the same but different! We have already seen that the genealogist works back in time, studying collateral lines in order to identify paper trail cousins to support or add to the family history. Alternatively, a genetealogist *begins* with the

family history. Looking at the pedigree, the genetealogist asks which branch he or she wants to learn more about with respect to the deep genetic ancestry and possible migration patterns. Is it the paternal line



Source: *Historical Atlas of Central Europe* by Paul Robert Magocsi. Volume 1 University of Washington Press, Seattle. Copyright 2002.



ZAMAGURIE/ ZAMAGURZE REGION: [Slovak (Polish Spelling)]. Map 2.

(outer most branch of the family tree) often called the surname line? Does the deep ancestry of the maternal line (outer most maternal branch going from the mother to her mother to her mother, etc.) pique interest? Or, is he or she curious to find genetic matches across the inner branches of the family tree?⁴

The next step in the process is to identify one or more viable and willing candidates to take the appropriate DNA test.⁵ A candidate simply swabs the inside of his or her cheek and returns the completed kit to the testing company. In approximately four to six weeks, the results are posted on a personal webpage. No one can guarantee you will find genetic matches. However, with a greater understanding of the value of DNA testing and the increased affordability of the kits themselves, more genealogists are adding DNA testing to their genealogy toolbox. As greater numbers test, the database pool grows, which increases the possibility of finding genetic matches. Just as in the good ol' days of waiting by the mailbox for copies of records or photos from cousins, an email shows up in your inbox indicating a genetic cousin has been found. One can elect to make contact and compare notes with that "genetic cousin." At a minimum, DNA testing adds scientific evidence to support the genetic match. Since DNA testing can determine *if* two people are related (but not how), the genealogist must do reverse genealogy to try and find the paper trail connection. Comparing notes with

newly found connections may lead to sharing and adding to the family history. When we step back and compare these two processes, they don't sound all that dissimilar, do they?

Approximately twenty years ago, I began work on the Vodzak/Lopata family history. Like many genealogists, my grandparents died long before I became interested in our family's past. My mother and her siblings had never asked questions about our family, and therefore I had limited information with which to start. Through traditional genealogy methods and significant effort, I eventually located my ancestral region and villages. My Slovak ancestors came from the northernmost border of the former Spiš County, Kingdom of Hungary, known as the Zamagurie Region.⁶ These villages straddle the present-day border between Slovakia

and Southern Poland. While border regions can be fascinating, they also complicate genealogical research significantly. Little information about the Zamagurie region itself was available and rarely in English. What *was* found tended to be politically charged as fourteen of the villages are today part of Poland.⁷ In search of answers, I read anything I could find on both the history of the villages and the migration to and emigration from the region. Adding to the frustration, most of the needed Church records have yet to be microfilmed and remain only available in the actual parishes. If I was going to learn more about my maternal ancestry, I would have to learn the language and visit the region.

Over the course of nine trips to the villages, I began collecting village and church histories, trying to rebuild the context in which my ancestors lived. Pressing further back in time, family connections crossed the Bialka River, which forms the border between the Zamagurie and Podhale Regions (See Maps 2 and 3). Still, other branches were traced to villages in the former Spiš County (See Map 4). Slowly, I created a 40,000+ private database of people specifically from these regions. This was not just a list of my ancestors, but actual researched pedigrees going as far back in time as records (or access to records) would allow. At each generation, I would find all the siblings, their marriages, their children, etc. When combined with careful study of the records, this database acts as a powerful tool detailing the context of village life, as well as social and cultural norms. Social

patterns emerge such as births and marriages, who married whom, and how emigration changed these norms. Migration between certain villages but not others appears while links between villages and cities in the United States materialize.

Genealogy now became a tool and the basis for an academic project studying the interaction and movement of people across these geographic regions. Receiving one of two 2011-2012 Fulbright Research Grants, I lived in Slovakia for 10 months to continue studying the Slovak migration process.⁸ The quality, availability, and accessibility of records vary greatly in the archives and from village to village. Records typically date from the mid-to-late 1700s but rarely earlier. This is really quite late in terms of when and how the regions were settled. Historically, these geographic regions were first populated by the Magyars and Slavic tribes as early as the 6th to 9th centuries. Over time, German, Valachian, Monastic, Soltys, and, lastly, Kopanice colonization populated and repopulated these areas.⁹ The genetic makeup of the former Spiš County, Zamagurie, and Podhale regions clearly includes a mixed, multi-ethnic population of Slovaks, Germans, Poles, and Magyars.

The importance of studying a region is best stated by noted author John Bodnar, who claims “close attention must be paid to specific regions and geographic locations as emigrants came not so much from a particular country as they did from a specific region.”¹⁰ By combining the 40,000+ genealogy database *with* DNA testing, even more could be learned, including the deep ancestral origins and migration patterns of this multi-ethnic region. In March 2007, the Zamagurie Region Dual Geographic DNA Project was born. Later, in 2011, the project expanded to include the former Spiš County (Kingdom of Hungary) and certain Podhale Region villages. This sealed the marriage of the academic study and the systematic collection of data for a population of related individuals.

Knowing that genealogy and DNA go hand in hand, a complimentary set of goals continues to focus our efforts. The goals of traditional genealogy are as follows:

To grow the traditional genealogy database of pedigrees for the region(s)



PODHALE REGION. Map 3.

- To assist participants in locating their ancestors from the region
- To collect and preserve ancestral village and church histories, folk culture, and customs.

With respect to DNA testing, we aim to do the following:

- To establish a DNA database correlating to the researched pedigrees
- To collect DNA samples for surnames from the region (in the US and in the villages!)
- To formalize an academic review of the project results

Why should genealogists consider DNA testing in their research? In general, DNA testing can reveal the following items:

- If two people are related (defined as sharing a common ancestor)
- How closely two branches of the same surname are related

- If your traditional genealogy is correct (your paper trail can be wrong, but DNA cannot be!)
- Which branch of the Human Family Tree you belong to (Haplogroup – male or female)
- The migration patterns of your deep ancestry
- Clues to your ancestral ethnicity
- Clues to your geographic ancestral origins
- The results may help solve genealogy puzzles

Joining a geographic project makes the “genealogy haystack” a little smaller and offers potentially great returns. Connecting and comparing notes with others whose ancestry comes from the same region can expand general knowledge about the history, legends, culture, and folk customs of that region. Participants can share results or stories about ancestors from the same villages. When matched with genetic cousins, the genealogist uncovers potential relatives in unique ways. For example, Family Finder (autosomal) DNA links new cousins on the inner branches of your family tree.

Geographic DNA projects may also help to solve complex genealogy puzzles. For example, one might discover geographic ancestral origins of a particular surname. In the United States, 11 different branches of the surname VODZAK were identified. We may think that people with the same surname are related. The villages under investigation range from 600-1200 people. Many people have common surnames; so common in fact, that qualifiers such as house names or the names of grandparents are also listed in the records to designate a family link. DNA testing revealed that 9 of the 11 branches were indeed related while two were not. Upon completing the genealogy, each and every branch led across the ocean to a very small set of villages in the Zamagurie/Podhale Region. What appears to be an uncommon name was found in great numbers in this area. The DNA results suggest studying this particular set of villages could extend information regarding the Vodzak family history.

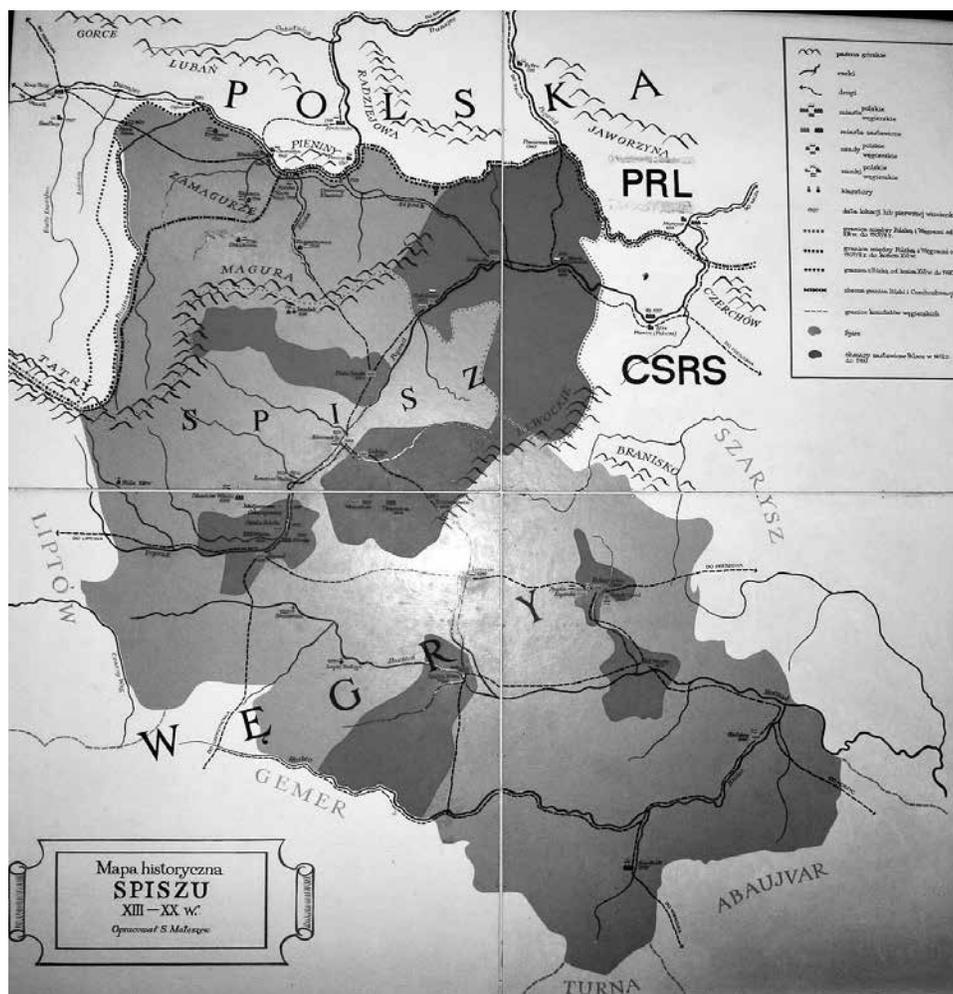
Did all nine Vodzak branches found to be genetically linked derive from the same progenitor? DNA testing was the answer again. Because certain types of DNA are passed down virtually unchanged from generation to generation, when small changes take place (mutations), they can help us determine how closely related the 9 related branches are. The number of “steps” away each of the branches tested gives a relative distance between the branches. The more steps (or mutations) there are, the further we must go back in time to find the common ancestor. Thinking again within our comfort zone, isn’t

this just like the relationship charts genealogists use showing direct or removed links to a common ancestor? Yes, all 9 branches are related. However, results for 5 of the 9 indicate a common ancestor well beyond a genealogical timeframe of 750-1000 years, meaning the answer resides beyond the availability of records. So, we learn that we may never find the common progenitor. Knowing this again may focus our efforts elsewhere.

Gaps in records and poor record quality can be frustrating. Missing data can prevent adding a generation back on a pedigree without some other proof to connect to the earlier data. As a good genealogist, we never skip generations. DNA testing may be able to fill the gaps in missing records. Testing two people identified as descendants from two branches may prove (or disprove) if the two are related. If the results match, one might be able to bridge the gaps in the records by following that line of the family. This is scientific evidence to support the revised pedigree.

As mentioned previously, the Spiš, Zamagurie, and Podhale regions were settled by various types of colonization, thereby creating a multi-ethnic population with varied social and cultural norms. Understanding this history may reveal important points for the genealogist studying in these regions. In one research example, we were looking for Thomas Soltys from the village of Lapszanka, a Polish Spisz village settled by Soltys colonization. Throughout the records, Thomas’s surname is listed as Soltys. In the region, Soltys is synonymous with mayor. In fact, the family lore indicates that Thomas was the mayor of Lapszanka at one point. The paper trail ends because no birth of a Thomas Soltys could be found. We suspected he was born as Thomas Trzop but needed proof. By DNA testing several Trzop descendants and combining the results with the corresponding genealogy, we verified that Thomas Soltys was indeed genetically Thomas Trzop. No non-paternal event had occurred. The name change reflects the social norm of taking the Soltys name.¹¹ A warning to readers: many researchers have the misconception that everyone with the surname Soltys descends from the original locator of the region. Actually, an alternate explanation suggests that the surname Soltys was adopted by people working on the Soltys properties.

Today, the Zamagurie and Spiš County Slovakia Dual Geographic DNA projects have a combined membership of 147 members. Our project is limited to those who can demonstrate an ancestral link to one or more of the geographic regions. Provided with each map are the villages and surnames associated with Y, mt-DNA, or



Former Spiš County Slovakia, Kingdom of Hungary, Austro-Hungarian Empire. Note the darker (were orange on the original) regions are wealthier market and mining towns pawned by Zigmund of Luxemburg to Poland in 1412 that remained under Polish administration until the first Partition of Poland. Map 4.

Family Finder (autosomal) testing. A summary table of the male and female haplogroups found in each region is also given. Both the male and female haplogroup distribution is what we might expect in these regions. Slavic roots (R1a) is the largest percentage in all three geographic regions under investigation; followed by Celtic (R1b), Middle Eastern (J) and Finnish/Estonian (N). As with most of Central Europe, we find the most predominant mt-DNA haplogroup to be “H” (or Helena). Of course, this is a small sample set. With added membership in these DNA projects, we may add to the deeper understanding of the ancestral roots – one location at a time.

POLISH SPISZ VILLAGES: Tatranská Javorina (Jaworzyna Spiska), Jurgov (Jurgów), Repiská (Rz-

episka), Čierna Hora (Czarna Góra), Tribš (Trybsz), Vyšné Lapše (Łapsze Wyżne), Lapšanka (Łapszanka), Nižné Lapše (Łapsze Niżne), Kacvín (Kacwin), Nová Belá (Nowa Biał), Krempachy, Durštín (Dursztyn), Falštín (Falsztyn), Frídman (Frydman), Niedeca (Niedzica), Lysá nad Dunajcom (Łysa nad Dunajcem), Majere, Spišská Stará Ves (Spiska Stara Wieś), Matiašovce (Maciaszowce), Spišské Hanušovce (Hanusowce), Veľká Franková (Wielka Frankowa) Malá Franková (Mala Frankowa), Osturňa (Osturnia), Havka (Hawka), Zálesia (Zalesie), Jezersko (Jeziersko), Reľov (Relów), Červený Kláštor (Czerwony Klasztor), Lechnica, Haligove (Haligowce), Veľká Lesná (Wielka Leśna), Veľký Lipník, (Wielki Lipník), Stráňany (Straniany), Lesnica (Leśnica Pienińska).

**ASSOCIATED SUR-
NAMES IN THE DNA**

PROJECT: ADAMCAK, ARVAY, BACHNIATKA, BEDNAR, BEDNARCIK, BENDIK, BIGOS, BIZUB, BLAHUT, BOLCAR, BOLCAROVITS, BRAVIK, BRIJA, BRINSKA, BRISZEK, BROZENIECZ, BUDZ, CZEMBA, CHERNISKY, CHMIEL, CHOVANIEC, CHURILLA, CSUPKA, CZERNECZKY, DEVERA, DUDASKO, DVORNICZKY, FERENCZEK, FERKO, FIGEL, FIGLAR, FRANASSEK, FRANKOVIC, FRANKOVSKY, FRONZ, FUNKE, GALOVICS, GAVENDA, GELYATKA, GLOVIANDA, GOLDYNAYK, GREHEN, GRIGLAK, GRINVALSKY, GROHOLA, GRONKA, GURECKA, GURNIK, GUROVITS, GURSCAK, HALUPKA, HANESCAK, HLAVACZ, HORNICAK, HORNÝIK, IGLAR, JABROVSKY, JADAMECZ, JAKUBIAK, JELEN, JEZERSKY, JEZIERCZAK, JURGOVSKY, KACMARCIC, KALAFUTH, KALYATA, KA-

SISKY, KOLODZIEJ, KOLUMBER, KOPALKA, KOPACZKA, KORKOS, KOPALA, KOSCAREK, KOSTYAK, KOVAC, KOVALTSIK, KRAK, KRISSEK, KRULY, KURNATH, KUBASSEK, KUCHTA, KUNA, KURNAVA, KURUCZ, LOJEK, LOPATA, LORENTROVITS, LUKAS, MACSUGA, MADEJA, MAGERA, MAJERSCAK, MANYAK, MARHEFKA, MARKOVICS, MASCURAK, MAS-KALA, MENDROS, MIHALEC, MILANYAK, MISKOVITS, MLYNARTSIK, MODLA, MOGOL-ICZKY, MOLITORIS, MONKA, MORAVCINCZYK, MROVECZ, NAPAUER, NEDOROSCIK, NEDORO-SCIK, NEMECZ, NOVAK, OVCARIK, OVSONKA, PACIGA, PALUCH, PAVLIK, PISARCIK, PITONIAK, PIVOVARTSIK, PLEVA, PODHOLANSKY, POJEDE-NIEC, POMPA, POTANKO, PRELICH, RICHWAL-SKY, SCHECHOVITS, SCUREK, SELIGA, SERILLA, SISKA, SKORUPA, SKOVIRA, SKVAREK, SMETA-NA, SMITKA, SMOJDA, SOLTYS, SOLYAVA, SRIS-KOVSKA, STEFANYAK, STRONCZEK, SVIENTY, SZARNA, SZISKA, SZMOLENY, SZTANEK, SZ-TAROSZOVICS, TAZIK, TINUSZ, THOMALANY, TUSKA, VACLAV, VADOVSKY, VARGO, VAXMON-SKY, VIDA, VILK, VILSEK, VODZAK, VOJTAS, VOZSEK, WILK, WNENCZAK, WODZIAK, ZA-JONC, ZALES, ZIBURA, ZMARZLIAK, ZSELYONK, ZSEMBA, ZSOLONDEK

PODHALE VILLAGES: Waksmund, Ostrowsko, Łopuszna, Gronków, Dębno, Szaflary, Groń, Białka Tarzańska, Gliczarów, Biały Dunajec, Bukovina Tatrzańska, Poronin, Brzegi, Olcza, Murzasichle, Male Ciche

ASSOCIATED SURNAMES IN THE DNA PROJECT:

BUDZ, CEKUS, CZERNIK, CZEMPA, FELONG, FIEREK, GAWEL, GIL, GUTKA, HALDYNA, HARNIK, HODOWOWICZ, JAZABEK, KALYATA, KACMARSIK, KALAFUT, KORKOSZ, KRA-MARZ, LITWIN, LOJAS, LUKASZYK, LUKAS, LYTOWZKI, MARDULA, MLYNARSIK, MUCHA, MROWCA, NOWABILSKY, OBLAZNY, ORAWIEC, PARA, PIEKARZ, REMYASZ, REPISCAK, ROZ-MUS, RUSIN, RUSNAK, RYBKA, SZTANEK, STRA-CHON, TRYBULA, TRZOP, TURZA, WILCZEK, WODZIAK, and ZIELINSKI among others.

SPIŠ COUNTY (SLOVAKIA) VILLAGES:

Abrahámovce, Arnutovce, Baldovce, Batizovce, Beharovce, Betlanovce, Bijacovce, Brutovce, Buglovce, Bušovce, Bystrany, Červený Kláštor, Danišovce, Dedinky, Dhlé Stráže, Doľany, Domaňovce, Dravce,

Dúbrava, Forbasy, Gánovce, Gelnica, Gerlachov, Granč-Petrovce, Hagy Haligovce, Harakovce, Harichovce, Havka, Helcmanovce, Henclová, Hlncovce, Hniez-dne, Hnilčík, Holumnica, Hozelec, Hôrka, Hrabušice, Hradisko, Hraničné, Hranovnica, Hrišovce, Huncovce, Chmeľnica, Chrasť nad Hornádom, Ihľany, Iliášovce, Jablonov, Jaklovce, Jakubany, Jamník, Jánovce, Jara-bina, Jezersko, Jurské, Kaľava, Kamienska, Kežmarok, Klčov, Kluknava, Kojšov, Kolačkov, Kolinovce, Ko-rytné, Kravany, Kremná, Krížová Ves, Krompachy, Kurimany, Lacková, Lechnica, Lendak, Lesnica, Le-tanovce, Levoča, Lieskovany, Litmanová, Lominička, Lučivná, Lúčka, Ľubica, Majere, Malá Franková, Malý Slavkov, Maniowy, Margencany, Markušovce, Matejovce nad Hornádom, Matiašovce, Mengusovce, Mlynčeky, Mlynky, Mníšek nad Hnilcom, Mníšek nad Popradom, Nálepko, Nemešany, Nedeca, Nižné Repaše, Nižné Ružbachy, Nová Lesná, Nova Lubovna, Odorín, Olcava, Olšavica, Olšavka, Opátka, Or-dzovany, Osturňa, Pavľany, Podhorany, Podolíne, Poľanovce, Pongráčovce, Poprad, Poráč, Prakovce, Rakúsy, Reľov, Richnava, Rudňany, Slatvina, Sloven-ská Ves, Slovinky, Smižany, Smolnícka Huta, Smolník, Spišská Belá, Spišská Nová Ves, Spišská Stará Ves, Spišská Teplica, Spišské Bystré, Spišské Hanušovce, Spišské Podhradie, Spišské Tomášovce, Spišské Vla-chy, Spišský Hrhov, Spišský Hrušov, Spišský Štiavnik, Spišský Štrvotok, Stará Lesná, Stará Lubovňa, Stará Voda, Stráne pod Tatrami, Stranany, Stratena, Studenec, Sulín, Svit, Štôla, Šuňava, Švábovce, Švedlár, Tatranská Javorina, Teplička, Toporec, Torysky, Tvarozna, Uloža, Veľká Franková, Veľká Lesná, Veľká Lomnica, Veľký Folkmar, Veľký Lipník, Veľký Slavkov, Vikartovce, Vít-kovce, Vlkovce, Vojkovce, Vojňany, Vrbov, Výborná, Vydrník, Vysoké Tatry, Vyšné Repaše, Vyšné Ružbachy, Vyšný Slavkov, Zálesie, Závada, Zavadka, Žakarovce, Ždiar, Žehra. Also in this project are the 14 historical Polish Spisz villages: Čierna Hora, Durštín, Falštín, Fridman, Jurgov, Kacvín, Krempachy, Lapšanka, Nedeca, Nižné Lapše, Nová Belá, Repiská, Trybst, and Vyžne Lapše.

ASSOCIATED SURNAMES IN THE SPIŠ COUNTY SLOVAKIA DNA PROJECT: This list is lengthy and best viewed at the project website.

About the Author:

Karen A. Melis, a 2011-2012 Fulbright Scholar, is passionate about placing our Slovak ancestors in the very context in which they lived. Living in Slovakia for 10 months, she actively sought out new primary sources

in the State Archives and in the 200+ former Spiš County Slovakia villages to better understand the very conditions under which so many of Slovaks decided to migrate. Combining 20+ years of hands-on research and digitizing of records in the Polish Spisz, Podhale, and former Spiš County villages, she applies current academic methods of studying Slovak socio-economic and cultural patterns. Based on her intimate knowledge, experience, and research capabilities, Karen formed SlovakGenealogy, LLC to help others find their Slovak roots. SlovakGenealogy, LLC has the unique advantage of being able to work on both sides of the ocean, specializing in those villages that have not been microfilmed by the LDS. Please see <www.genealogy.sk> for more details.

(Endnotes)

1. Smolenyak Smolenyak, Megan et.al. *Trace Your Roots with DNA – Using Genetic Tests to Explore Your Family Tree*. Rodale. © 2004, pg.x. Ms. Smolenyak is the group administrator for the Osturňa, Slovakia DNA Geographic DNA project with FamilyTreeDNA. Osturňa is included in the set of villages of the Spiš County Slovakia Project. Members of the Osturňa project are welcome to join our project.
2. See <www.isogg.org> for a comparison of companies performing DNA testing for genealogical purposes. While beyond the scope of this article to help select a DNA

testing company, it is critical to consider the following: What is their main business? How large is their database? How do they support their customers and projects? Since each company has their own test methods and database, it is important to know that results cannot be directly related between different companies.

3. See <www.familytreedna.com> for details about FamilyTreeDNA. See <www.familytreedna.com/public/ZamagurieRegionDNAProject/> <www.familytreedna.com/public/Spis_County_Slovakia/> for specific details about our specific projects.

Table 1: Zamagurie and Spis County Slovakia Dual Geographic DNA Project Haplogroup Summary

Y DNA Summary Results	ZAMAGURIE REGION			SPIS REGION
	Slovak Spis	Polish Spisz	Podhale	Total
Number of Y DNA Tests	22	44	9	76
Y Haplogroups				
E1b1b1	2	1	0	2
N	4	1	0	3
J1	0	0	0	1
J2	4	4	0	7
J2b2a	4	0	0	1
I1	0	1	0	3
I2a	1	2	0	5
I2b	0	2	2	1
R1a1	1	8	2	9
R1a1a	2	14	4	23
R1a1a1	1	2	0	2
R1aga1g	3	6	0	8
R1b1a2	0	3	1	11

mt-DNA Results	ZAMAGURIE REGION			SPIS REGION
	Slovak Spis	Polish Spisz	Podhale	Total
number of mt DNA tests	20	32	9	71
Mt-DNA Haplogroups				
H	10	15	5	32
I	1	0	1	0
J	3	1	0	6
K	0		1	1
T1	0	1	0	1
T2	1	2	0	5
U	2	0	0	3
U2	0	1	0	3
U4	0	2	0	0
U5	0	7	2	12
V	1	3	0	4
X	2	0	0	4

4. Selecting the appropriate DNA candidates and DNA tests requires a basic understanding of genetics described only briefly here. A human genome consists of a whole set of chromosomes. A chromosome is the structure carrying the DNA molecules containing all of our hereditary information. Each human cell has a total 46 chromosomes: 22 paired and one pair of sex chromosomes as well as multiple copies of mitochondrial DNA. The 22 pairs are autosomal chromosomes numbered 1-22. The sex chromosomes are XX for females or XY for males. Scientists developed different DNA tests based on the differences of how men and women inherit DNA. By selecting certain candidates and the appropriate tests, genealogists can study various branches of their family history.
5. What is important to remember is the Y chromosome is passed only through the direct male lineage (Y-DNA test). If interested in learning about any male or surname line, a male candidate must be selected for the Y-DNA test. This can be a brother, uncle, father, or cousin of known relationship to the line you want to investigate. Females therefore cannot take a Y-DNA test as they do not have a Y sex chromosome. The result identifies the male haplogroup, defined as a large cluster of people who can trace their ancestry to a founding branch of a particular genetic population. The letter and numbers in the test results represent a main branch and smaller "twigs" of the Human Family Tree. Mitochondrial or mt-DNA is passed strictly through the direct female lineage (mt-DNA test) to each of her children and stops. Therefore, one can trace the maternal lineage back in time by taking an mt-DNA test. Both men and woman can take the mt-DNA test. Again the result identifies the female haplogroup and a series of numbers indicating differences between the sample when compared to the Cambridge Reference Sequence, the first fully sequenced mt-DNA sample. Several levels of testing affording greater discernibility between matches are available through Family Tree DNA. For our Spiš County and Zamagurie Geographic DNA project members, we recommend no less than Y-37 or mt-DNA PLUS tests whenever possible. If interested in the inner branches of a pedigree, either a male or female may take the Family Finder Test, which looks at only a small but stable portion of the autosomal chromosomes to identify genetic cousins. These results attempt to predict a relationship between the possible genetic cousins, which then must be followed up through standard genealogy practices.
6. Zamagurie (Slovak)/ Zamagurze (Polish) consists of 34 villages located north of the Magura Mountains in northern most Slovakia. Today, 14 of these villages, originally part of the former Spiš County, Kingdom of Hungary, reside in Southern Poland.
7. The 14 Polish Spisz villages, surrendered to Poland as a condition of the Treaty of Trianon on 26 July 1921, continued to be pawns of several border disputes until well after World War II.
8. See <<http://www.honorscollege.pitt.edu/sites/default/files/documents/newsletters/2012-fall-newsletter.pdf>> published in the University of Pittsburgh's Honors College Newsletter Fall 2012 for a brief glimpse into what it was like to live and perform research in Slovakia under the Fulbright Scholarship Program.
9. Kršák Pavol, *Ottov Historicky Atlas Slovensko*, Praha. © 2012. Translated by K. Melis. After the Mongol invasion, these regions became depopulated. Realizing it may take more than a decade for the natural population to grow, King Bela IV invited Germans to settle in Hungary. Given certain rights, most settled in or near the free-market or Royal towns. Others more rarely formed rural settlements. (pp.96-97). Vallachian (of Rusyn and Romanian origin), settlements were already beginning to emerge in the 14th C populating the foothills deep up into the hills. Although historians differ widely on the theories, it is thought the Valasi penetrated the northern Spiš region in the 15th C probably from Galicia and spreading southward. (pp. 110-111). The Valachs changed the focus of sheep raising from meat and wool to producing sheep milk products. While original settlers were impacted by their heavy movement of sheep through the fields and forests, the landlords offered privileges to increase the use of their lands (and financial benefits) of the high meadows and forests. In the 16-18th Centuries, additional migrations waves were the result of Kopanice or Lazy settling. Originally thought only to occur in western Slovakia, the Podhale and Zamagurie Regions were first extensions of temporary and/or permanent settlements near original mines or charcoal making areas. Later, like Valasi settlements, they extended deep into the less arable and unused lands. (p. 249) Often, Monastic colonization is overlooked as a source of population diversity. As religious orders established monasteries within the Spiš Regions, foreign settlers followed to work their large tracts of land. In the 18th C waves of emigration resulted in population movements towards regions with better work opportunities. During this time the Spiš County Population grew. (p 206). These types of colonization through time led to the diverse population and genetic make-up of the regions under investigation.
10. Bodnar, John. *The Transplanted – A History of Immigrants in Urban America*. Bloomington, Indiana University Press, 1985, p. 4.
11. A warning to the readers, many researchers have the misconception that everyone with the surname Soltys are descended from the original locator of the region. Alternative explanations include the surname Soltys was adopted by serfs working on the Soltys properties, lived in or near the Soltys lands, and/or adopted a familial link to the actual Soltys.