

The WIRTH Project

Status report – December 2014

The WIRTH Group genealogical research project originated in 2003 when two apparently unrelated persons, Herb Huebscher of Long Island, NY and Dr. Saul Issroff of London, matched each other exactly in 12-marker Y-DNA tests carried out by Family Tree DNA (FTDNA). At the time they had no other exact matches. Both had performed the DNA tests to pursue their own Jewish genealogies beyond the “brick walls” they had encountered through conventional research.

Further tests revealed that they still were close matches at the 37 marker level (1 point apart). While Huebscher and Issroff were the only two exact matches at the 12 marker level, male members of several other families also were found to be close matches with them. These individuals had different surnames and were not known to be related (in a conventional sense). At that point, a key discovery was made: In addition to being close matches, Issroff and Huebscher as well as the other males in the database exhibited two anomalies:

- (1) A shift in value at DYS464 b from a nominal value of 13 to 13.1;
- (2) Two extra DYS464 values (or “alleles”), DYS464 e and f.

These anomalies are independent of each other and each has a chance of random occurrence in the order of 1 in 100 – making the chance of a double or mutual random occurrence 1 in 10,000. Those odds made it virtually certain that they all shared a common ancestor on their male paternal line. It was not known when or where the most recent common ancestor (MRCA) lived or how the present-day families are related to that ancestor along patrilineal descendant lines.

A group was started by Huebscher and Issroff, adopting an acronym based on the first letters of the surnames of the initial five matching families, namely WIRTH (for Wolinsky, Issroff, Rossoff, Tenenbaum, and Huebscher). That group has grown from the original five to over 150 families – as the number of tested males with WIRTH characteristics in the FTDNA Y-DNA database has grown over time to about 190.

The WIRTH Group is a separate, unique, homogeneous cluster on the J2 phylogenetic tree, defined by the L556 and L560 SNP mutations. It is one of the larger Jewish clusters in the FTDNA database, accounting for 7.7% of Y-DNA with Jewish ancestry in the FTDNA database. The most recent common WIRTH ancestor may have been born as early as a thousand years ago.

Presentations were made at the 2006, 2007, and 2008, 2009, 2010 and 2013 IAJGS conferences reporting on the ongoing research, and articles were published in Avotaynu in the Summer 2007, Spring 2008 and Winter 2013 issues.

Initial Questions

The initial questions that the research sought to address were:

- (1) When and where did the group’s common ancestor live?

(2) Was he an Ashkenazi or Sephardic Jew?

(3) Was he a Cohen, Levite, or Israelite?

(4) What were the earliest known geographical origins of the families comprising the group?

(5) How did this extensive family nexus develop?

Most of the group's families are Jewish. Of the roughly 15% or so who are not, most knew of their paternal Jewish roots. However, in a few cases (<5%) this knowledge came as a surprise. The earliest known paternal ancestral origins of the group lay mostly in Eastern Europe, ranging from Lithuania and Belarus in the north, to Ukraine, Rumania and Hungary in the south, with some also in Central Europe (Germany and France). In most cases, the origins dated back to the 1800's, some to the 1700's, and in one instance, the Weil family, to the 1300's.

Are Members of the Group Sephardic?

Although the known origins of most WIRTH families lie in Eastern and Central Europe, a small number of families have oral histories going back to Spain. One family's match with the group was a complete surprise: Sonia Rosa-Velez, a genealogist researching the origins of Puerto Rican families, ordered a Y-DNA test of her father Pascual Rosa, and his results indicated he was a member of the WIRTH Group. The earliest known origin of the Rosa family is located in Aguada, Puerto Rico (PR), where much of the family still lives. This last discovery suggested that the group's MRCA may have been a Sephardic Jew. However, there existed the possibility that an Ashkenazi ancestor had slipped onto the island and was one of the ancestors of Pascual Rosa. In 2011, with the full cooperation of the Rosa family, the project initiated testing Pascual's autosomal DNA to learn more about his ancestral origins with the hope of locating the trail leading back to his Iberian ancestor. Given the numerous matches that Ashkenazi Jews have with autosomal testing, we hypothesized that if Pascual Rosa had an Ashkenazi ancestor, he would show some Ashkenazi matches in his autosomal results. The initial results of the Family Finder test showed 18 matches with Pascual, all apparently of Puerto Rican ethnicity, some with origins going back to Spain. To date, as more people have done the Family Finder test and have been matched Pascual Rosa, none appear to Ashkenazi, supporting the idea that he had no Ashkenazi ancestors within the last 5 generations. The FF Population Finder results score 20% of Pascual's autosomal DNA as being of Middle Eastern/Jewish origin – consistent with a paternal Jewish ancestor. Pascual Rosa's Y-DNA was also tested for the two new SNPs, L-556 and 560. He was positive for both. He is, without doubt, a WIRTH. But did this prove our common Sephardic ancestry?

It was posited that if Pascual is in fact the descendant of a Sephardic Jew who became a converso, it might be possible to trace his paternal ancestral chain back to Spain, using census, baptismal, marriage and death records, as well as records from the time of the Inquisition that may still exist in Spanish archives.

Dr. Ana Oquendo Pabon, a leading expert in Puerto Rican genealogy as well as genetics, accepted the role of research leader for the Rosa Research Project. The project tested 14 other unrelated Puerto Rican Rosa males, hoping to find one or two who matched and had the same ancestor. It was reasoned that the likelihood of success would be greater researching several descendant chains rather than just one. However, none matched the WIRTH Group or Pascual Rosa's family. An extensive search of Latter Day Saints (Mormon) microfilm records was carried

out by a WIRTH volunteer in Salt Lake City. Records in “ancestry.com” were also examined in detail. The result was a comprehensive genealogical report prepared by Dr. Oquendo late in 2011 that laid out the genealogy of the entire extended Rosa family. However, the documentary research came to a stop and essentially hit a “brick wall” at the birth of Pascual’s great grandfather, Juan Rosa, born ca. 1820 in Aguada, Puerto Rico. Interestingly, one of the subjects tested, while not being a WIRTH, had “Jewish DNA”, indicating that Pascual Rosa may not have been an exception in his region of Aguada.

Are Members of the Group Levites?

Given the high percentage (>95%) of known paternal Jewish ancestry within the group, it was deemed certain that the MRCA was Jewish. On the other hand, it was not apparent to which “tribal” grouping he belonged, i.e. whether he was he a Cohen, Levite, or Israelite. Significantly, a number of the families have the Levite tradition; none believe they are Cohen’s; and the majority have no knowledge of their “tribal” status. Since Y-DNA and Levite status “travel” along the same route (from father to son, to son, etc.), theoretically all members of the group should have the same status as Jews – that is to say, assuming that all the families are related, it follows that if some are Levites, then all should be Levites. Several possible explanations of the disparities within the group have been considered, with one emerging at the time as the most likely. The working hypothesis was that in the majority of families, Levite status was lost or forgotten at some point through the descendant chains, i.e. it faded away. Are the WIRTHs Levites?

Thanks to the cooperation of Janet Akaha and Rachel Unkefer of the Jews of Frankfurt project, in 2011 we matched the Weil family. Rabbi Aryeh Weil has an extensive paternal genealogy going back to the 1300s. According to his family tree, he is the descendant – 17 generations down the line – of the famous Rabbi Yaacov b. Yehuda “Weil der Stadt” (ca. 1385-1486 CE). The latter’s father was Rabbi Yehuda Weil b. ca. 1350, who perhaps lived in Spain. It was noted that R. Aryeh Weil’s 12-marker results matched the corresponding WIRTH values. His further Y-DNA test results revealed that he is an exact match with the WIRTH modal at 25 markers, including the two DYS464 anomalies. Additionally, he is only one point off the modal at 37 and 67 markers and he is close to the modal at 111 markers. He also tests positive for both special SNPs, L-556 and L-560.

Was he the missing link needed to find our most common ancestor? In order to help test this, we found other Weils who had similar family trees and performed YDNA tests on them. These Weils matched each other and were also matches to us, which strengthened the credibility of the Weil family tree. Another rabbinical family from the Jews of Frankfurt project, the Bacharachs, were also matches to the WIRTH Group.

The Match to the Weil Family Raises Questions About the Original Hypotheses

The matches to these rabbinic families called into question our two original hypotheses: 1. Our MRCA was Sephardic. 2. Our MRCA was a Levite. The history of the Weil family (who could be the progenitor of the WIRTH Group) shows that the Weils were Ashkenazi, with a relatively brief stopover in Spain. It is possible that this stay in Spain is the reason for our possible “Sephardic” roots. This also raises the question of how one defines Sephardic, because there were many interchanges of Jewish populations between the Iberian Peninsula and Eastern and Central Europe. One other issue with the Sephardic theory is that we would have expected more matches with “Crypto-Jews” and/or more matches with men with known Sephardic

backgrounds. This has not happened. In a survey of the WIRTH Group undertaken in 2014, only 8 of the 89 respondents to the survey (or about 9%) are aware of a Sephardic tradition in their families, but none are documented.

The Levite theory was also called into question by the match to the Weil family and Bachrach families. A high percentage of WIRTH members have Levite traditions in their families, but most WIRTHs do not. In our WIRTH survey, 16 of 89 families, or 18%, claimed Levite status, while the estimated percentage of Levites in the global Jewish population is only 4%. No WIRTH claimed Kohen status, 39% claimed Yisrael status and 43% did not know. At least three members discovered their family's Levite tradition after seeing the high number of WIRTHs with Levite traditions and researching their own family histories. One of these members was Herb Huebscher, the founder of the WIRTH Group, who discovered a Ketubah (marriage contract) proving his family's Levite tradition. As previously mentioned, we assumed that those families without a Levite tradition had simply forgotten it over the generations. However, the Weil match created a problem, as they did not have a Levite tradition. The Weils are a rabbinic family, and one would presume they would not have forgotten an important religious tradition such as this. It is possible that there was an unrecorded paternal event (infidelity, adoption, etc.) or that some of the ancestors of our Levite families incorrectly believed they were Levites, or invented it. The last is unlikely because if you were going to invent a tradition, you would more likely choose to be a Kohen, which is higher in ranking than a Levite. None of our WIRTH families claim Kohen status. Also, the Levite families in the WIRTH Group appear to be from different branches, so the error or invention, if there was one, appears to have occurred in multiple families. Another twist is that in the Weil family there is an oral history that the name Weil in Hebrew is an anagram of the word Levi, which was meant to confuse the Spanish authorities while still preserving their Jewish background. This would tend to support both the Levite and Sephardic theories, but there is no documentation of this. To make matters more confusing, one of the Weils in the WIRTH Group claims a Levite tradition, but the other Weils do not.

Are Rabbinic Trees Reliable?

A major question that genealogists have to deal with is whether a particular family tree is reliable, especially those trees that go back many centuries. There were two other rabbinical families in the Jews of Frankfurt project that, based on families trees, should have matched the Weil line and therefore the WIRTH Group. One is the Treves family, and the other is Wertheimer. With these two families we had mixed results. While we had two men that claimed family trees that were descended from the Treves rabbinical line, only one was a WIRTH, the other was not a match to us. We do not know which one is actually descended from the Treves line; perhaps neither one is. A similar issue happened with the Wertheimer family, another rabbinic family, where two men claim Wertheimer lineages, but only one is a match to the WIRTH Group. So at least one non-paternal event (unrecorded adoption, surname change, infidelity, etc.) happened somewhere along the line. While we have not as yet found any similar issues with the Weil or Bacharach lines, our experiences here shows all it takes is one event to throw off the family tree even the in the most pedigreed of families.

DNA Matching Within the WIRTH Group

Currently, 150 families within the WIRTH Group have been tested to 67 or 111 markers. As a result, a key characteristic of the group has been identified with certainty - namely, the WIRTH Group's "modal haplotype," which is the set of 67 Y-DNA values of the ancestral/root family,

from whom all the present families in the group are descended. The degree of matching between the families can be expressed as the genetic distance (GD) of each from the modal haplotype. Examination of the 150 families' GDs from the WIRTH modal haplotype provides a meaningful indication of the degree of matching within the WIRTH Group. Knowledge of the modal haplotype also makes it possible to identify groups of families that share specific STR mutations 2 GDs from the modal and appear to represent separate branches on the group's family tree.

The fact that members of the WIRTH Group match closely, but to varying degrees (GD = 0 to GD = 7) helps solve an important part of the genealogical puzzle - approximately when the most recent common ancestor (MRCA) lived. [Applying the binomial algorithm developed by Whit Athey to the distribution of GD values, the estimated most likely number of generations from the birth of the tested families back to the MRCA is 14.8 generations. Using an average generational interval of 30 years and taking the present generation's average birth year as 1930 CE, the MRCA's birth is estimated to have been in ca.1485 CE. Since a number of assumptions are made in the foregoing calculations, the date is regarded simply as a rough estimate of the MRCA's "start of life" date. However, this is a rough estimate and is fluid. We believe that as we have subsequently accumulated additional data, including the match to the Weil family, the MRCA's birth may be older than previously believed by as much as 2-4 centuries.]

Knowing the modal haplotype of the group and as more and more members joined the group, it became feasible to construct a family tree based solely on Y-DNA results – a "phylogenetic" tree of the group. The first such tree was developed in 2007 and was published in Avotaynu (Summer 2007 issue); an updated tree was presented at the 2008 and 2013 IAJGS conferences.

STRs, SNPs, Deep Ancestry, Haplogroup, Deep Clade

The Y-Chromosome contains two major components: The repeating part and the non-repeating part. As summarized above, the role played by Y-DNA in the WIRTH Group's discovery and the analysis of genealogical relationships of families within the group was made possible by testing and analysis of the repeating part of the Y-Chromosome – the 12, 37, or 67-marker STR values of each tested member of the group. As it came to be realized that the WIRTH Group represented a large, distinctive cluster of paternally related Jewish families, attention was also directed at the non-repeating part of the Y-Chromosome – represented by the four basic DNA "nucleotides," or building blocks (symbolized by the letters AGTC) in a very long seemingly random sequence of those four letters, e.g. ATCCAGGAATCGACCTAA.... etc. When a nucleotide in one specific position of the sequence changes, say from G to C, that is referred to as a "single-nucleotide polymorphism" (SNP) mutation. When such a SNP is discovered by a researcher, it is given an alphanumeric designation – for example "M172." SNP mutations in the Y-Chromosome are unique events that define branches, sub-branches, and twigs of the male tree of evolution. The major branches of that tree are the haplogroups, and the furthest out twigs are called "clades." Every haplogroup, sub-haplogroup and clade is uniquely determined by the SNP mutation that caused it to form.

The presence of SNP M172 in all WIRTH Group members' DNA demonstrated that they are part of the large Haplogroup J2 (on the phylogenetic tree of male evolution) which, it is estimated, had its origin roughly 20,000 years ago in the Middle East. Narrowing things down, a number of members had "deep clade" tests performed on the non-repeating part of the Y-DNA.

Those tests look for SNPs that occurred later in time (thousands of years apart) and designate the sub-branch and “twig” of the human Y-DNA phylogenetic tree. The presence of chronologically successive SNPs M172, M67, and M92 placed the Group in what used to be called clade J2a4b1a. With the discovery of many new SNPs in recently developed extensive Y-chromosome testing, it has become too clumsy to use the old terminology, and branches are now defined by their main haplogroup branch and terminal SNP. To date, 57 group members have had deep clade tests; all were positive for SNPs M67 and M92 (in addition to M172). Given the close matching and shared anomalies in the repeating STR parts of the members’ Y-DNA, there seems little doubt that the entire group is part of that clade.

New SNPs Discovered

Early in 2011, Herb Huebscher did the “Walk on the Y” test through FTDNA’s advanced laboratory. This special test looks for SNPs that may be personal to the tested person, or that have not been previously discovered. The test found two SNPs, denoted as L-556 and L-560, which had not previously been seen in any other male. Thereafter, seven other WIRTH group members were tested for those two SNPs and all tested positive. We have determined with further testing that all of the WIRTH Group members have both of these two SNPs.

Specific Genealogical Findings

In parallel with research into the characteristics of the WIRTH Group as a whole, specific genealogical findings have come to light. In a number of cases, persons not previously known to each other or to be related have found strong evidence of a recent common ancestor. In some cases, suspected relationships were confirmed. To mention a few examples: Art Rossoff and Dave Rosoff (with origins in Dokshitz, Belarus) were exact matches; Mark Perlen and Dan Tuerk (with paternal ancestry hailing from near Pinsk in Belarus) were exact 67-marker matches and only one point apart at 111 markers. By combining DNA with genealogical sleuthing, a man born out of wedlock, who had known almost nothing about his father, found a half-brother, whom he closely matched. Further, the research has debunked the concept within the Eastern European Jewish world of a “Galitzianer versus Litvak” divide (broadly speaking, Galitzianers came from the Western Ukraine, while Litvaks originated in areas embracing Lithuania and regions to the north and south thereof). In the WIRTH group, Litvaks and Galitzianers have been shown to be directly related to one another and are almost equally represented within the group. Issroff and Huebscher, co-founders of the Group, are Litvak and Galitzianer, respectively.

Passing of Herb Huebscher Leaves a Major Void

In July 2013, Herb Huebscher, the driving force behind the WIRTH Group, passed away. Herb’s death was a blow to the WIRTH Group, both from a personal and research point of view. In dedication to their father’s love of genealogy, Herb’s family has been very supportive of the group, both financially and otherwise. The three administrators of the group, Dr. Saul Issroff, Judy Lefkowitz Simon and Richard Gussow, have pledged to continue the research of the WIRTH Group. A Facebook page has been set up where members can exchange ideas and information, and a website will be launched in the near future.

Research Goals

The goals of the research as of the end of 2014 are:

(1) To discover maximal data on the WIRTH Group's most recent common ancestor (MRCA), i.e. who he was, when and where he lived; (2) To confirm or negate the hypothesis that the MRCA was a Sephardic Jew; (3) If he was a Sephardic Jew, to trace the migration of his descendants out of Iberia; (4) To confirm or negate the hypothesis that he was a Levite; (5) If he was not a Levite, to explain presence of Levites in the Group and its lack of uniformity in that respect.

Conclusion: New Test Results Could Lead to Breakthroughs

Looking ahead, we look forward to the results of the Big Y test taken by Rob Huebscher, Herb's son. This will not only give us further insight into our DNA, it is also a tribute to Herb that his son is continuing to support his research. Other WIRTH members have also ordered the Big Y test, including Pascal Rosa. We expect that further testing of the Y chromosome through the Big Y test will identify new mutations that will define sub-groups within the WIRTH group. This will enable us to show which families within the WIRTH project are more closely related to each other. For example, it would be helpful to know if all families who have a Levite oral history share a particular mutation that the other families don't share; likewise for the families who have an oral Sephardic history. We therefore need several families who claim Levite status as well as several families who claim Sephardic ancestry to order the Big Y test. • Given the nature of the WIRTH research project and the continuing advances in technological developments and tools in DNA testing, it is reasonable to predict that new genealogical and genetic findings will further elucidate the genesis and genealogical structure of a significant segment within today's Jewish population, the WIRTH Group.