UPDATE – DNA FOR AGS

By Ms. Toni Leon Kovarik, AGS Member

Post Mortem Y-DNA and atDNA (Family Finder) Hair Root Analysis Success for Genealogy

Robert J. Leon was the last living direct male descendent of William Anthony "Tony" Leon. Tony was Robert's great grandfather. After over 40 years of trying to break through the mystery of this oldest known ancestor, Robert was this family's last hope for answers. For a number of reasons, including health issues, Robert never took the Y-DNA test.

When he died in early 2019 it was learned that the funeral home responsible for Robert's burial was offering a service to do an autosomal (atDNA) test on its clients. Robert's step-daughter had declined that offer. The funeral director was contacted to determine if it was still possible to do a Y-DNA test on the deceased. The lab that provides this service for the funeral home was consulted to determine if a sample would still be viable, as the deceased's body had already been embalmed. The Canadian firm, SecuriGene Technologies, Inc., replied that it was possible with a hair root/bulb sample.

Robert's stepdaughter was contacted and agreed to the extraction, test, and access to the sample and results of any tests for genealogical purposes. Once the sample was obtained, Martin Brady, President of the Albuquerque Genealogy Society, assisted in the process by questioning SecuriGene about the contents of the sample, obtaining quality and quantity numbers.

The results of the conversation are as follows:

SecuriGene extracted 1,109 ng of good quality DNA (purity of 1.72% - target is 1.7 to 1.9%) from Robert's hair root. The DNA was not stored in a buffer. It is dried and in cold storage (~-20C). SecuriGene thought putting the DNA in buffer would increase degradation rate. The conclusion was that it appeared that there was more than enough DNA for Y67 (Y-DNA test requiring 280 ng of DNA), and Family Finder (atDNA test requiring 160 ng of DNA) testing (280 ng + 160 ng = 440 ng required).

After assurances that the sample was viable, the decision was made to have the sample sent to FamilyTreeDNA (FTDNA) in Houston, Texas, which has a vast database of Y-DNA and atDNA (Family Finder) matches.

Since the sample had been collected in a nontraditional method according to the current collection method used by FTDNA, John Farris moderator of the Albuquerque Genealogy Society's DNA Special Interest Group (SIG), on behalf of the family, wrote an e-mail to FTDNA requesting an exception to their typical collection method and asked if they would accept

Robert's DNA sample extracted and processed at another laboratory. Permission was given and arrangements made to have the sample sent to FTDNA.

After several rounds of discussion with FTDNA, the sample was analyzed and both atDNA and Y-DNA results were posted. At 67 markers there are 279 matches, of which there are 133 family trees posted. Later, an upgrade to Y-111 markers was purchased to narrow down the matches. The resulting number of matches was astounding. There were 138 matches to Robert's Y-DNA, where typically there are only a few matches, and 57 family trees were posted.

At this time in the research process, the following can be reported.

Family Finder (atDNA) Matches

Number of Matches at 2nd - 4th Cousin Level: 115

Number of those matches with family trees posted: 42

Y-67 DNA Matches: 288

Genetic Distance	Number of Matches	Family Tree Posted	Email Sent	Email Response Received
2	1	1	1	1
3	11	8	2	1
4	27	7	3	1
5	47	24		
6	89	44		
7	125	53		

Y-111 DNA Matches: 150

Genetic Distance	Number of Matches	Family Tree Posted	Email Sent	Email Response Received
3	2	2	2	2
4	5	5	1	1
5	6	3		
6	6	5		

Genetic Distance	Number of Matches	Family Tree Posted	Email Sent	Email Response Received
7	31	14		
8	25	16		
9	35	14		

In general, the smaller the Genetic Distance number (mutations) the closer in time that match is to Robert's results.

It is time consuming, difficult and tedious to look at all of the posted family trees. However, thus far I have looked at 24 of the 57 posted family trees for Y-111 and have found 16 trees with surnames that could be related.

Likewise, I have looked at 7 of the 42 posted family trees for Family Finder matches and have found 7 trees with surnames that could be related.

Another tool that FTDNA provides to genealogists is "Projects." "Group Projects are an opportunity to work with others to explore your genetic heritage. They are usually focused on a common geographic origin, surname, or ethnic heritage. They may also be based on some other aspect of a paternal or maternal lineage." [FTDNA website] I have joined the following Projects for further clues to Robert's heritage.

FTDNA Project Name	# of Y-67 Matches	# of Y-111 Matches	# of Members
Elliot(t)	50	35	400
Border_Reivers	84	51	2415
RL21 4466 & South Irish	2	1	1498
Ulster Heritage DNA	18	8	5263
O'Shaughnessy DNA	0	0	55

The last test on the list "O'Shaughnessy DNA" was selected to look into a piece of family lore. One of Tony Leon's sons, Tony Jr., on his death bed, told his niece Dorothy Leon "You think our last name is Leon but it is not. It is O'Shaughnessy." Many hours have been spent trying to prove this statement to no avail. This FTDNA project supports our suspicions that he was not telling the truth.

This is a work in progress and will take some time to complete. However, these results are encouraging and very exciting to me.

Preliminary Conclusions:

Based on the Y-DNA results it would appear that the original surname of Robert's family was "Elliott" rather than "Leon" and that the family was from the Border Reivers Region, which is Northern England and Southern Scotland.

With advice and guidance from the following individuals, additional analysis is now underway in hopes of breaking through the family's "brick wall."

The team responsible for this project includes the author, Ms. Toni Leon Kovarik, John A. Farris, Martin Brady, and Philip Spivey.

Our team isn't aware of DNA results from a hair bulb from an embalmed cadaver ever before being used for genealogical analysis. Thus, this may be a worldwide first. We very much appreciate the cooperation of the two laboratories involved.