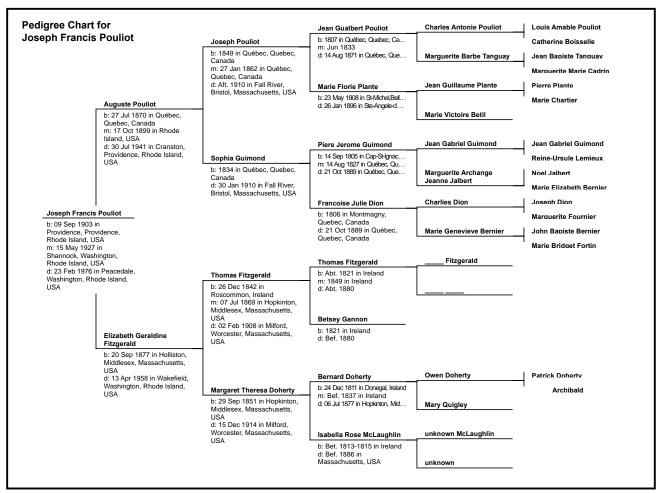
# Making the Most of DNA Testing

Heather Pouliot Kisilywicz January 2018

### Objectives

- + Define the benefits and limitations of DNA testing
- + Increase awareness of the
  - + top companies
  - + types of testing
  - + types of report results
- + Outline first steps to easily leverage DNA matches and support and/or expand your genealogical research

## Genealogical Tree



### Genealogical vs. Genetic Trees

#### Genealogical

 Includes an individuals every ancestor, at each generation, even if they have not yet been identified

#### Genetic

- Includes ONLY those ancestors who contributed to your DNA
  - + Small subset of your genealogical tree
  - Siblings have different genetic trees
  - No guarantee that genealogical ancestors past 5 generations have contributed detectable amounts of atDNA.

## Which Company?

- + Top companies: Ancestry.com, 23andme and Myheritage.
  - + Also: LivingDNA, GPS Origins, Vitagene
- + Features:
  - + Size of database (other testers)
  - + User interface
  - + Length of storage
  - + Access Raw Code
  - + Privacy policy
  - + Type of testing offered: Autosomal, Mitochondrial, Y

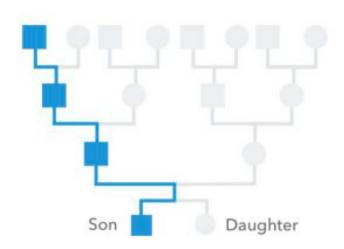
## How do they work?

- + Order the kit
  - + Either swap or "fill the tube"
  - + Morning, empty stomach (skip the morning joe!)
- + Register online & mail
- + 4-6 weeks

## Haplogroups

Y-DNA (Male)

Paternal-Line Haplogroup Inheritance



Mitochondria or mtDNA (Female) 16,600 base pairs

Only mothers pass their mtDNA down to their children

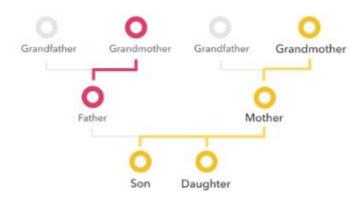
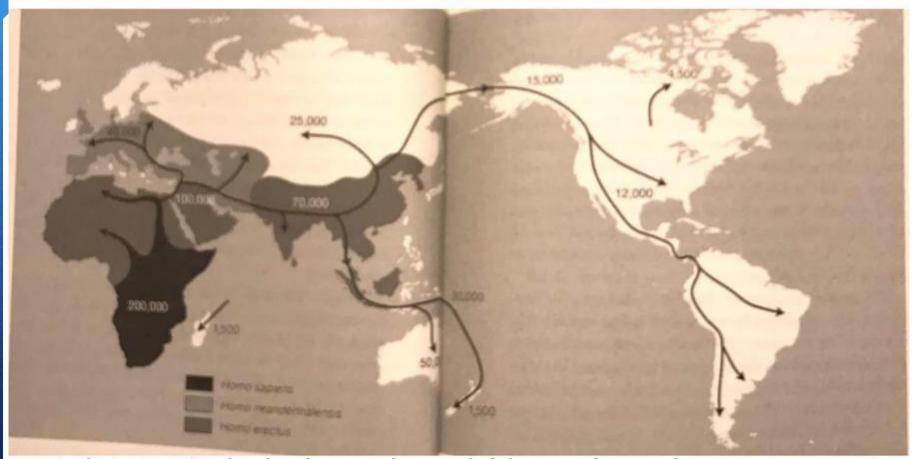


Image from 23andme.com

## Immigration & Haplogroups



Rutherford, Adam. *The migration of Homo sapiens out of Aftrica*. "A Brief History of Everyone Who Ever Lived: The Human Story Retold Through Our Genes" p<sub>39</sub>

#### **Autosomal**

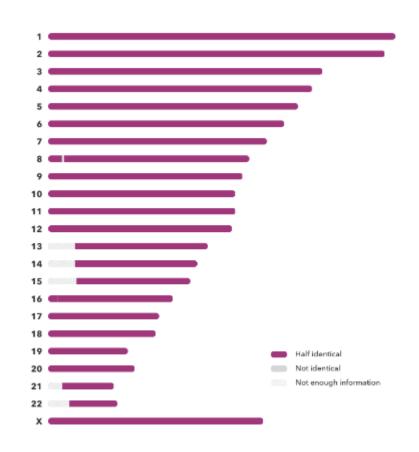
#### 22 chromosomes

+ 3 billion basepairs (nucleotides): GC, AT

99.9% of all humans DNA is exactly the same

"Identity By Descent" IBD

- Length of shared segments between two or more individuals are measured in Centimorgans
- + % matching segments





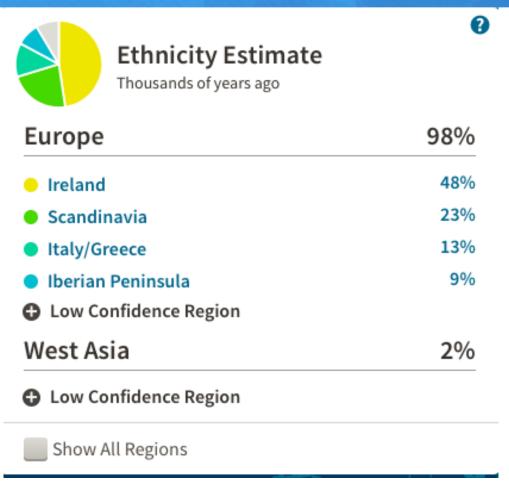
J<sub>1</sub>b<sub>1</sub>a

Image from 23andme.com

## Your test results are in!

Are you ready?

### Ethnic Profile



Ancestry DNA.com

# Ethnic profile

#### **Ancestry DNA.com**

Europe	98%
<ul><li>Ireland</li></ul>	48%
<ul><li>Scandinavia</li></ul>	23%
Italy/Greece	13%
Iberian Peninsula	9%
<ul> <li>Low Confidence Region</li> </ul>	
<ul><li>Europe West</li></ul>	2%
Europe East   >	2%
Great Britain	< 1%
West Asia	2%
Low Confidence Region	
<ul><li>Caucasus</li></ul>	2%

#### 23andme.com

100%	European
	Northern European
55.3%	British & Irish
16.6%	French & German
2.4%	Scandinavian
18.8%	Broadly Northern European
	Southern European
3.5%	Broadly Southern European
0.5%	Eastern European
2.9%	Broadly European
100%	Vincent Bowler Pouliot

## Myheritage.com

#### Your Ethnicity Estimate (beta) 3

All ethnicities

All supported ethnicities





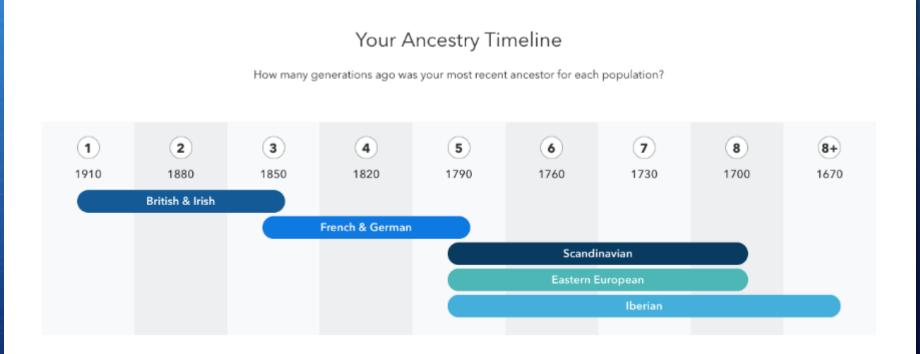
#### MyHeritage ►NΛ

^ Eur	100.0%	
•	North and West Europe	77.3%
	North and West European	47.9%
	Irish, Scottish, and Welsh	23.1%
	Scandinavian	6.3%
•	South Europe	22.7%
	Iberian	22.7%

Heather Kisilywicz 100.0%

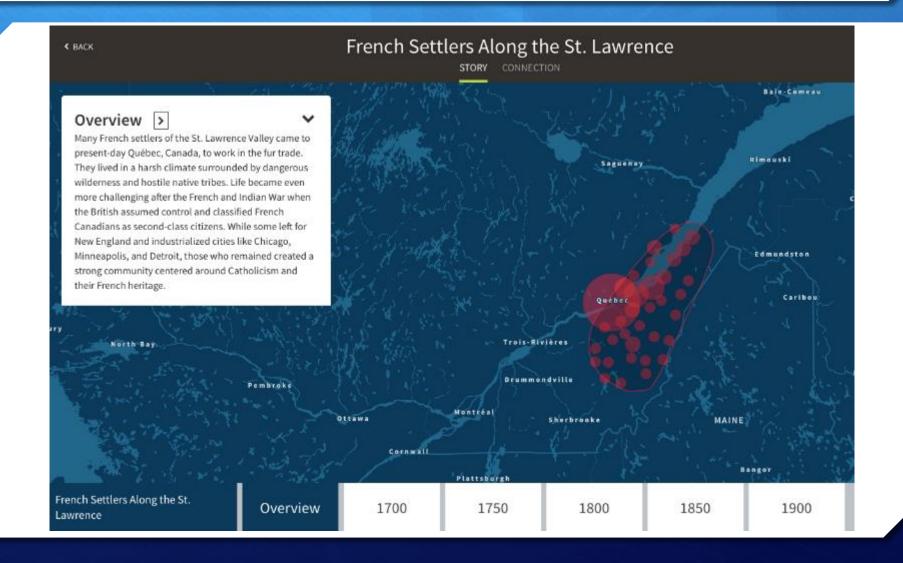


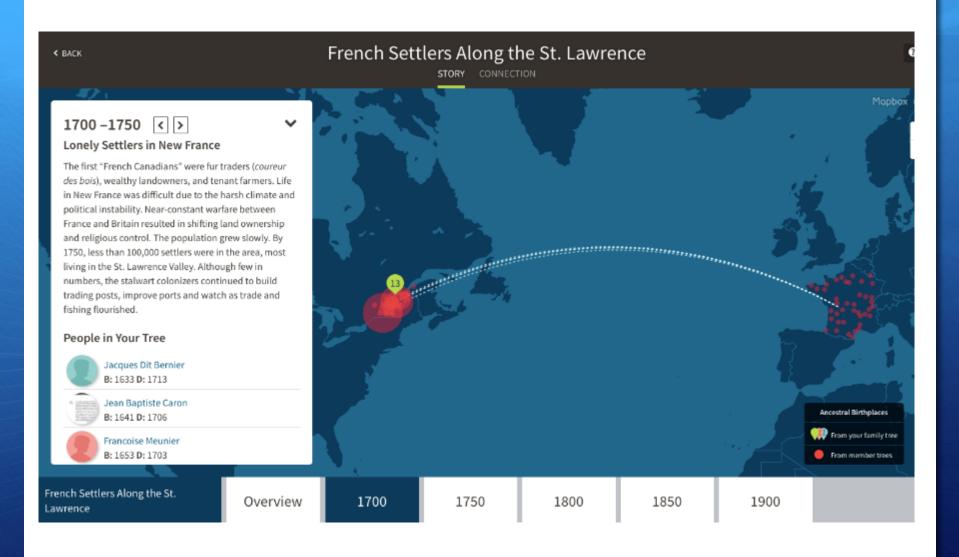
## 23andme.com "Ancestry Timeline"



Admixture: the mixture of populations that previously have been long separated

### Ancestry DNA.com Genetic Communities



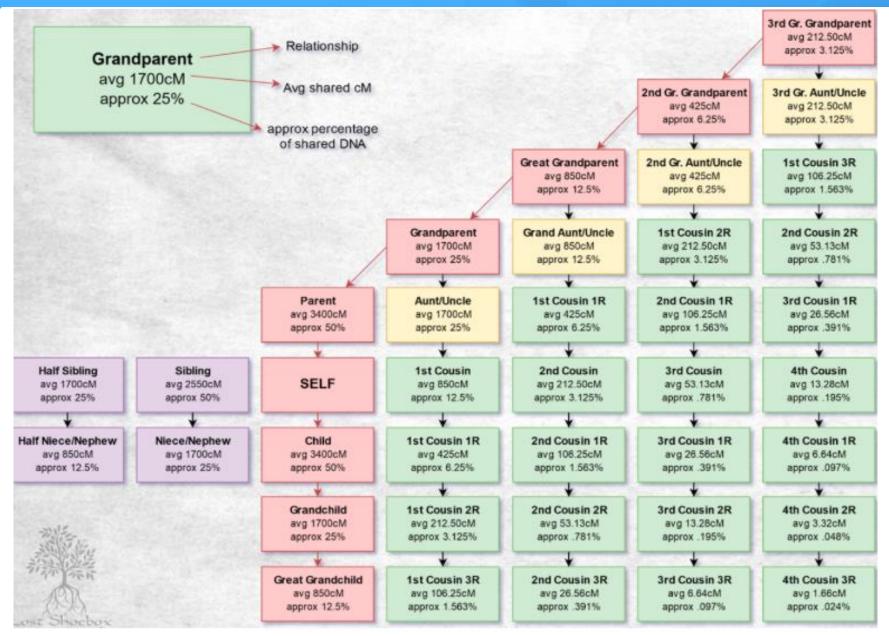


ancestry DNA.com Genetic Communities example

### Average percent shared among relatives

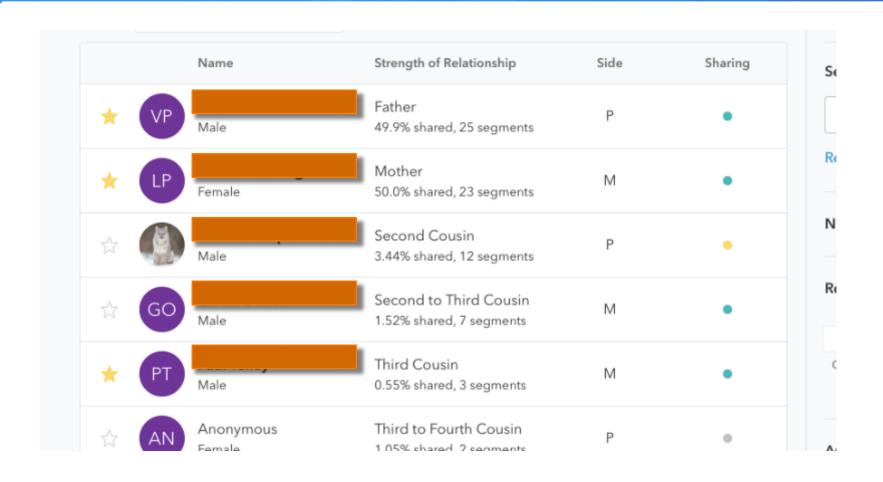
Generation	# of Great grandparents	# of Great grandparents whose DNA you retain	% of Great grandparents represented in your DNA
4th	8	8	100%
6th	32	28	88%
8th	128	51	40%
10th	512	61	12%

<sup>&</sup>quot;Beginners Guide to Genetic Genealogy Lesson 2: Which DNA Test" September 2017.

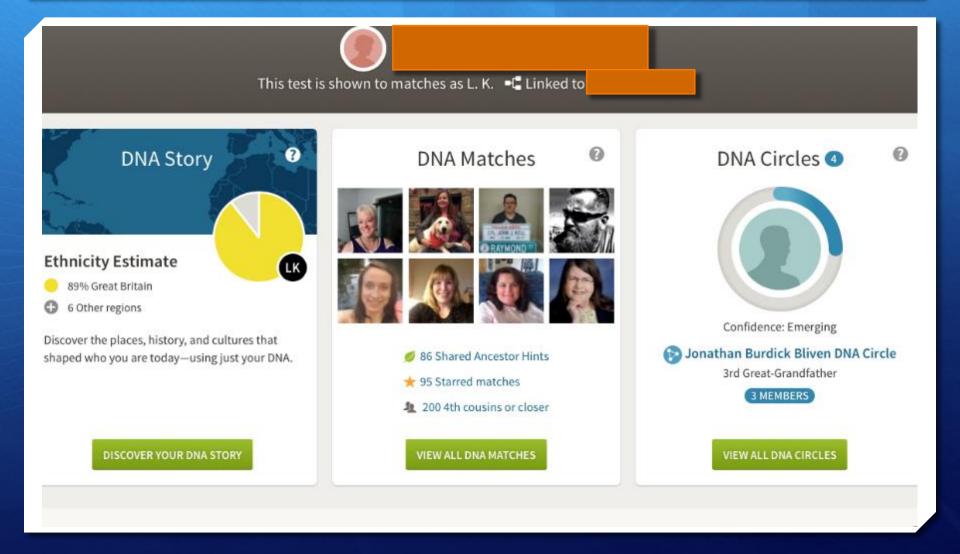


ostshoebox.com/dna/

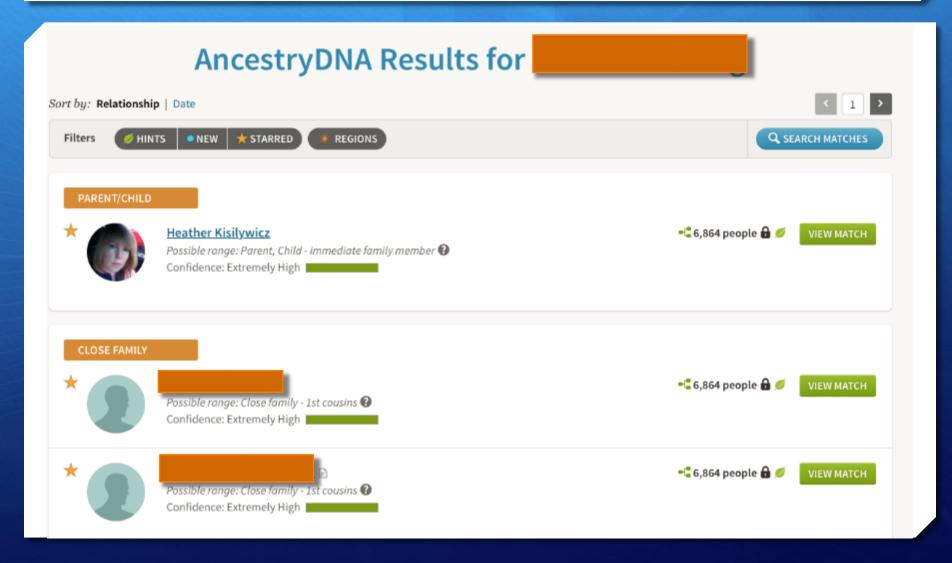
## 23andme.com



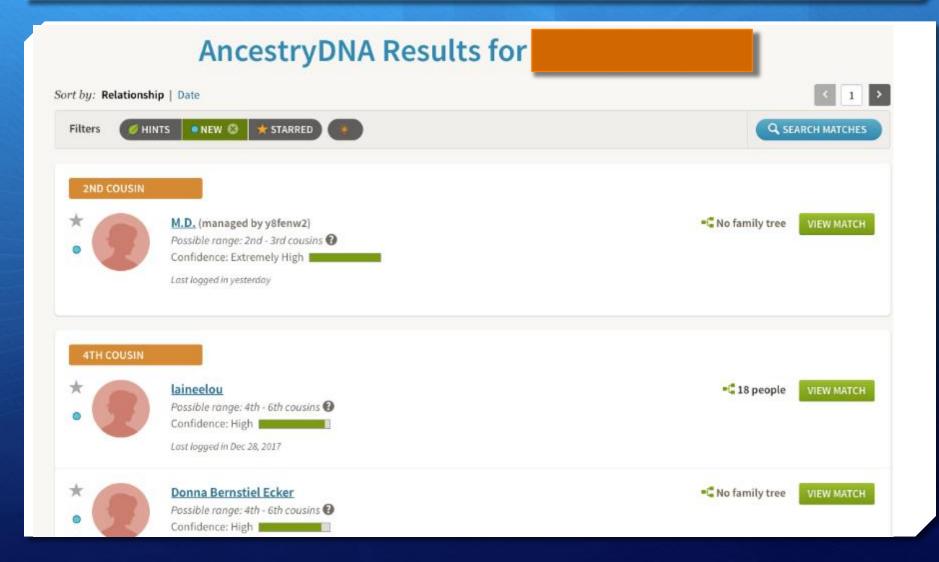
### Ancestry.com



### Ancestry.com



### Ancestry.com



#### MRCA: Most Recent Common Ancestor

- + Goal: Determine the Most Recent Common Ancestor (MRCA) through **Triangulation**:
  - + Process where a group of three or more people share a segment of DNA which is assigned to an ancestor who is also found in each of their genealogical trees.

## Benefits of DNA testing

- + Indisputable
  - + "As long as DNA evidence is correctly interpreted, it does not contain untruths."
- + Genetic Genealogical Standards 2015
- + Adheres to the Genealogical Proof Standards:
  - + Element 1: "Reasonably exhaustive research has been conducted."
  - + "Any proof statement is subject to re-evaluation when new evidence arises"
- + Supports genealogical findings and directs future research
- + Can overcome roadblocks or provide significant clues
- + Expands your community of researchers for collaborative investigation

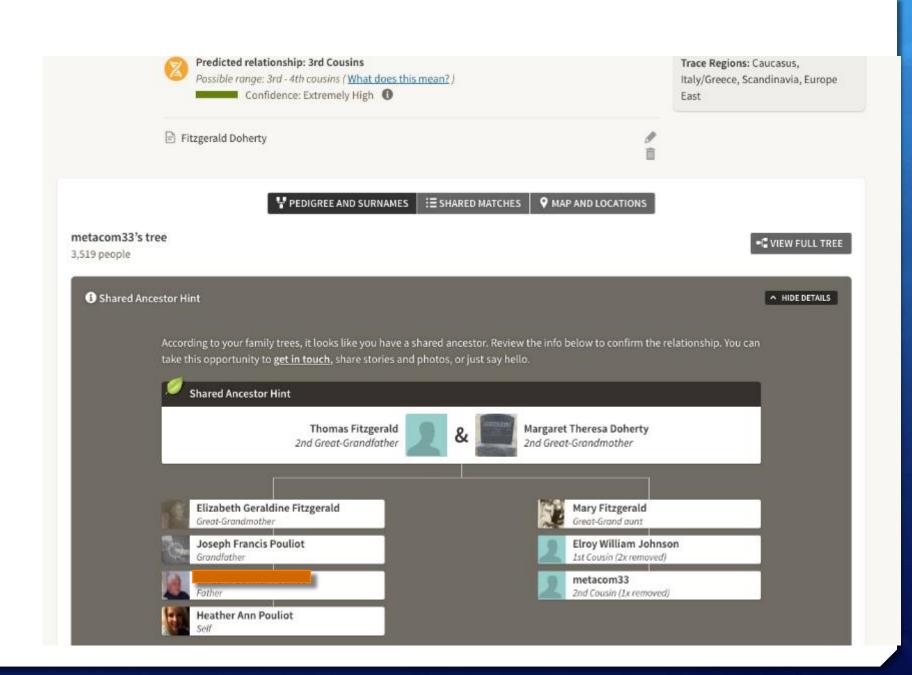
Bettinger, Blaine "Genetic Genelogy in Practice" National Genealogical Society. Arlington, VA. 2016 (location 227 of 3104) Genealogical Standards, 50<sup>th</sup> Anniversary Edition (Nashville & New York; Ancestry Imprint, Turner Publishing, 2014) 1-3, Jones, Thomas W. *Mastering Genealogical Proof.* (Arlington, VA: National Genealogical Society, 2013).

#### Limitations

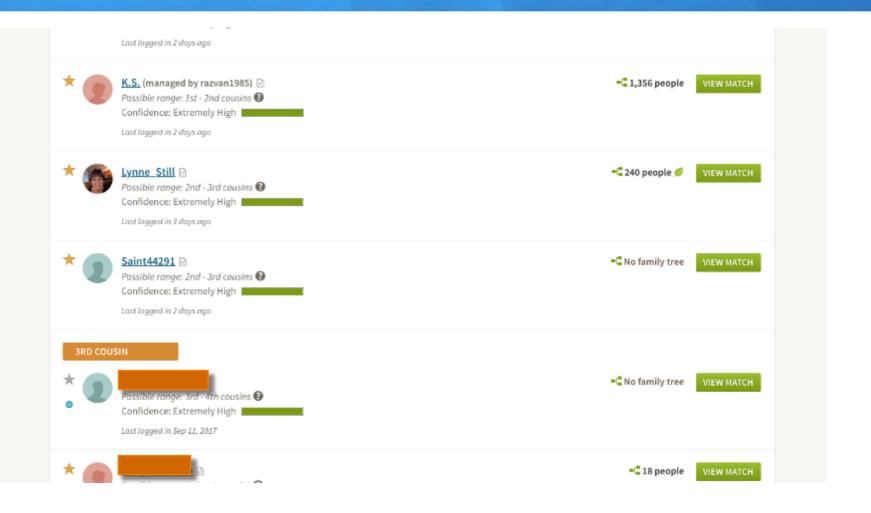
- + DNA is not absolute.
  - + Always shades of probably, albeit sometimes "extremely high."
  - + After 7 generations, plus/minus 2, you may not inherit at least one ancestors DNA
- + Limited acceptance by genealogical societies, at this time.
- Overwhelming
- + Time consuming to research
  - Incorrect, limited or incomplete genealogical trees make building branches on a genetic tree to find common ancestor extremely hard, if not impossible.
- + Limited test
  - + May not have a test taker to help with specific research questions

# Techniques to find MRCA

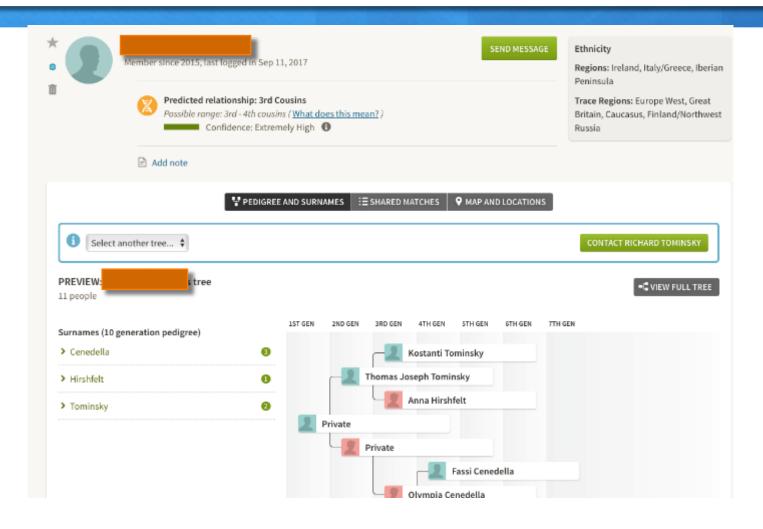
No public tree



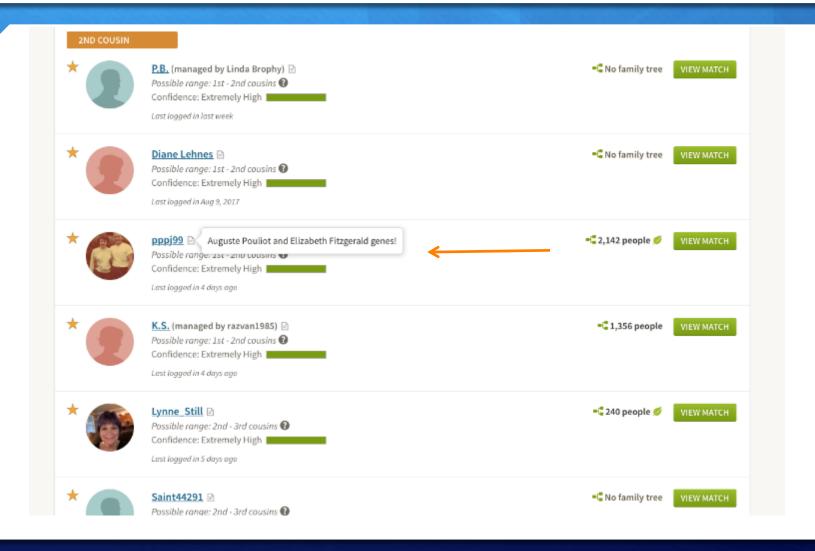
### **Shared Matches**



## Leverage Shared matches



### Triangulation: R.T, Dad and everyone else



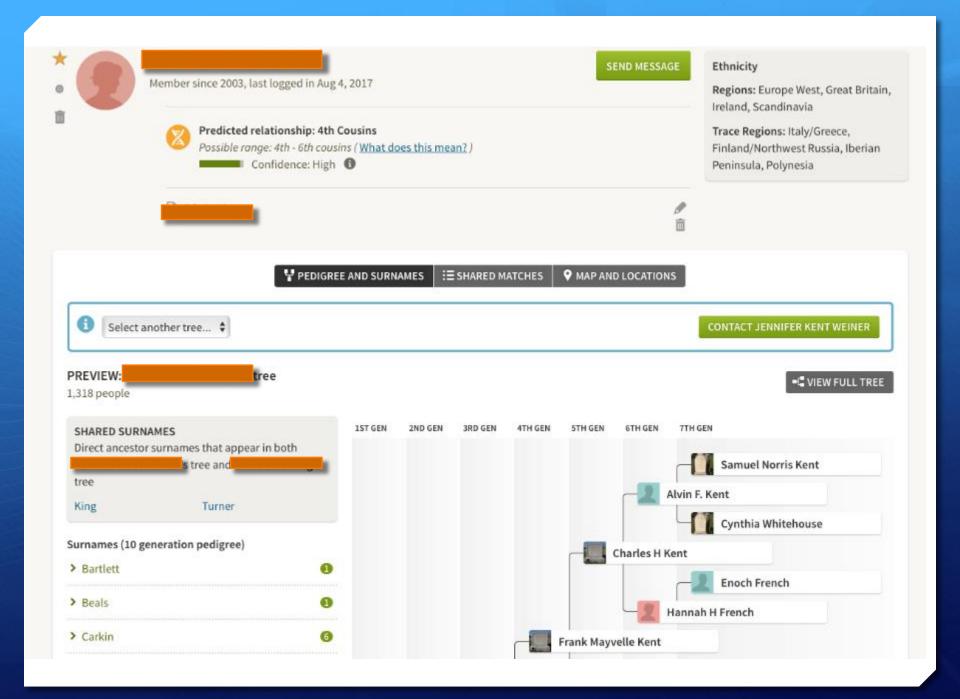
#### **Pedigree Chart for** Joseph Pouliot Jean Gualbert Pouliot **Vincent Bowler Pouliot** b: 1849 in Québec, Quebec, Canada: Fr... **Auguste Pouliot** m: 27 Jan 1862 in Québec, Quebec, Ca... b: 27 Jul 1870 in Québec, Quebec. d: Aft. 1910 in Fall River, Bristol, Massac... Marie Florie Plante Canada: 5th of 9 children m: 17 Oct 1899 in Rhode Island, USA; Elizabeth 21; Auguste 28 d: 30 Jul 1941 in Cranston, Piere Jerome Guimond Sophia Guimond Providence, Rhode Island, USA; 72 b: 1834 in Québec, Quebec, Canada: Fr... Howard State Hospital Joseph Francis Pouliot d: 30 Jan 1910 in Fall River, Bristol, Mas... b: 09 Sep 1903 in Providence, Françoise Julie Dion Providence, Rhode Island, USA m: 15 May 1927 in Shannock, Washington, Rhode Island, USA; 24 Thomas Fitzgerald Thomas Fitzgerald d: 23 Feb 1976 in Peacedale. Washington, Rhode Island, USA: b: 26 Dec 1842 in Roscommon, Ireland;... Elizabeth Geraldine Fitzgerald Broadrock Road m: 07 Jul 1869 in Hopkinton, Middlesex, ... b: 20 Sep 1877 in Holliston, d: 02 Feb 1908 in Milford, Worcester, Ma... **Betsey Gannon** Middlesex, Massachusetts, USA d: 13 Apr 1958 in Wakefield, Washington, Rhode Island, USA; 80; South County Hospital Bernard Doherty Margaret Theresa Doherty b: 29 Sep 1851 in Hopkinton, Middlesex, Massachusetts, USA b: 22 Sep 1938 in Wakefield, d: 15 Dec 1914 in Milford. Isabella Rose McLaughlin Washington, Rhode Island, USA; Worcester, Massachusetts, USA; 63 Born during the 1938 Hurricane m: 03 Sep 1966 in South Kingstown, Washington, Rhode Island, USA: John Bowler Joseph Bowler Ceremony in the home of mother of the bride; Reception at the b: 27 Oct 1839 in Mansfield Woodhouse... Samuel Edmund Bowler Lighthouse Inn m: 07 Aug 1865 in Dublin, Ireland; South b: 03 Oct 1866 in Dublin, Dublin, d: d: Jun 1918 in Macclesfield, Cheshire, E... Mary Barks Ireland: 1/11 children: Maybe on Ship Street m: 16 Mar 1886; Both 19; Rev. Samuel G. Pool: Aultsville **Edmund John Crowe** Letitia Amelia Crowe d: 23 Feb 1944 in Westerly, b: 18 Aug 1847 in Dublin, Ireland Washington, Rhode Island, USA; Lois Adelaide Stevens Bowler d: 22 Jan 1893 in Macclesfield. 77; Ninigret Hotel Cheshire, England; 1:15 pm in Drill b: 05 Sep 1905 in Niantic, New Mary Wilson London, Connecticut, USA d: 27 Jan 1988 in Wakefield. Washington, Rhode Island, USA; **Guy Henry Cook** Michael Mason Cook Jr. 82; South County Hospital ER; 16:04 Mary Adelaide Louise Cook b: 22 Dec 1825 in Osnaburgh, Kent, Ont... b: 28 Jul 1866 in Osnaburgh, Kent, d: 16 Oct 1897; 71 years 9 months 24... Fredrica Weegar Ontario, Canada; 3/6 children, only girl; Town of Aultsville d: 04 Aug 1933 in Richmond, Washington, Rhode Island, USA; 67 Adelaide Ida Weaver George Weaver b: 13 May 1833 : Williamsburg d: 1874; 40 Elizabeth Southworth

## Techniques to prove MRCA

- + Look into shared matches
  - + Is there proven match?
- + Dig into their family tree
  - + Hunt surnames, locations and time frames
- + Reach out by email
  - + Copy and paste your "Hello Cousin!" email
  - + Provide a list of known surnames and locations based on predicted relationship
  - + Keep a communication log
  - + May have a private tree

### Bowler match

- + "Dawjuw49" D. Wright matched
  - + Shared surname is Bowler in England
  - + Determined the MRCA was William Bowler (1790-1863)
- + D. Wright able to tell his mother "Your Mom was right!"
- + Able to introduce him by email to another distant cousin that also lives in Australia!



#### Direct ancestors with the surname King

From : Kent Family Tree (2)

#### **Edith Lavina King**

B: 9 Jul 1884 in Portsmouth, New Hampshire, USA D: 3 Jan 1915 in Portsmouth, New Hampshire

#### **Edwin C King**

From : King (Girven) Family Tree (9)

#### John Stickland King

B: Abt. 1800 in England

#### Ann King

B: 1811 in Northamptonshire, England

#### **James King**

B: 1816 in England

#### William James King

B: 12 May 1830 in Plymouth, Devon, England D: 25 Dec 1910 in Quincy, Norfolk, Massachusetts, USA

#### **Edwin Cumming King**

B: 06 Dec 1840 in Long Buckby, Northamptonshire, England D: 09 Jul 1909 in Westerly, Washington, Rhode Island, USA

#### William J King

B: 04 Feb 1849 in Plymouth, Devon, England D: 06 Sep 1909 in Quincy, Norfolk, Massachusetts, USA



### **Edwin C King**

LIFESTORY

FACTS

GALLERY

Facts Family Sources SHOW **▽** Name and gender ♥ Ancestry Sources Parents U.S. City Directories, Employment Unknown Father 1822-1995 Sculptor Unknown Mother U.S. City Directories, 1822-1995 Spouse & Children Lavinia M Evans U.S. City Directories, 1846-1926 1822-1995 Edith Lavina King 1884–1915 U.S. City Directories, 1822-1995 Alfred L C King 1887– U.S. City Directories, 1822-1995

Kimball Bertha M Widow Hally M h 500 (37)
"Charles R clerk 27 (23) Congress rm 5 h 339 (37)
Wibird
"George H grocer 82 (61) Burkitt h 80 (b) do
" Harriet McEwen h 43 (6) Austin
" Harry M died Nov 17 1911
" John B driver h 110 Bridge
"Martha J widow Edward P h 889 South
" Martha S b 889 South
"Sarah D h 848 (111) Islington
"Theresa widow Josiah F h 108 (33) Vaugnan
6 William F b 44 (6) Humphreys Ct
William H janitor Christ church n 100 (9) Durkitt
Tring Goorge laborer h 243 (48) Vaugnan
(4 Commo non com h IIII 140) BOW [Dullough
" Lavinia M widow Edwin C cook b 103 (30) Inc
"Lydia widow Robert h 27 (3) Rogers [to
Kingshury Albert died Aug 3 1911
"Hector mining engineer b 93 (23) State
"Ichn G shoemaker h 189 (32) Fleet
" Martin H blacksmith B & M h 450 (05) Islington
66 Morry E. clerk 1 Market b 93 (23) State
66 Oloma H bookkeeper 3 Pleasant b 450 Islington
"Samuel H carpenter h 93 (23) State [State S Lincoln watch repairer 12 Market sq b 93 (23)
"S Lincoln watch repairer 12 Market sq b 93 (23

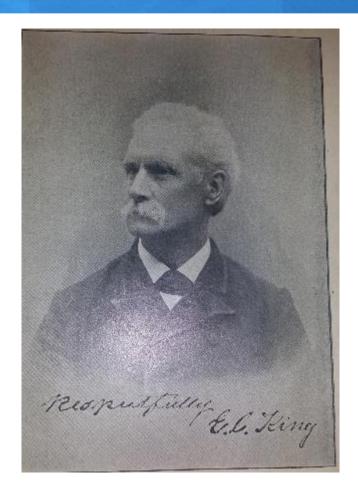
.

## 4<sup>th</sup> cousin JKW

- + Census work
  - + 1880 and 1900 living in Portsmouth with parents
  - + 1900 Lavinia is a "widow" Edwin doesn't die until 1909
  - + No documentation of a marriage has been discovered in Massachusetts, RI or NH

### Conclusion:

- Edwin C. King, sculptor, had business in both Westerly, RI and Quincy, MA
- + Edith L. King is daughter of Edwin with Lavinia and probablyAlfred L. C. King



# Biotrip

# Ancestry DNA.com's "Circles"

### **DNA Circles**

### 10 DNA CIRCLES

These are people who are already in your family tree (Smith (Wakefield) Family Tree)



Nathan Barber DNA Circle 4th Great-Grandfather (1732-1816)

15 MEMBERS









6 MEMBERS



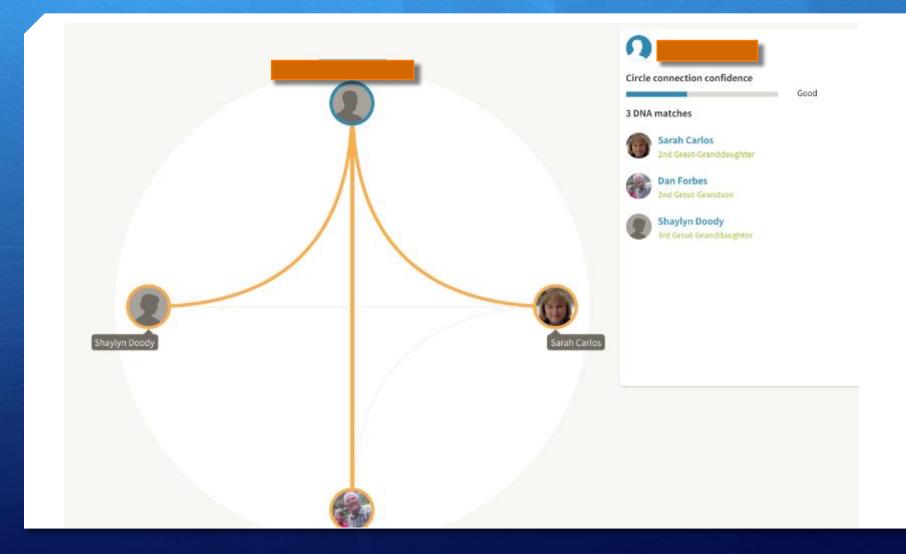


Whipple Mathewson Follett DNA Circle Great-Grandfather (1824-1898)

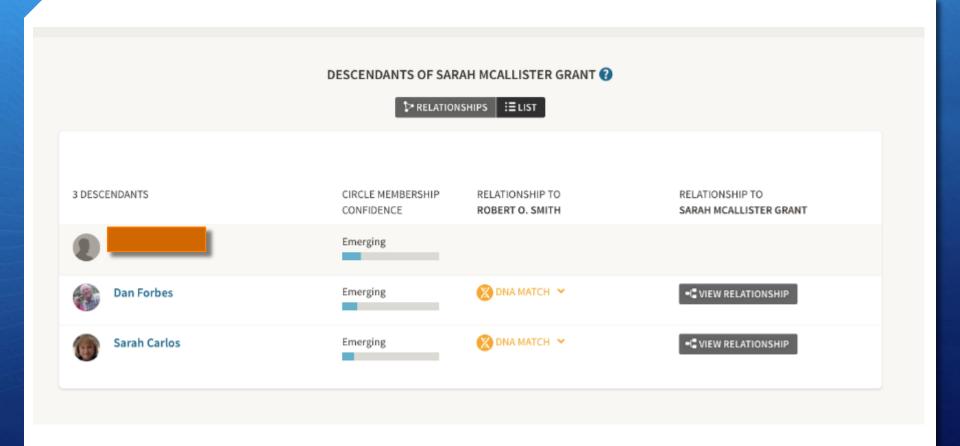
3 MEMBERS



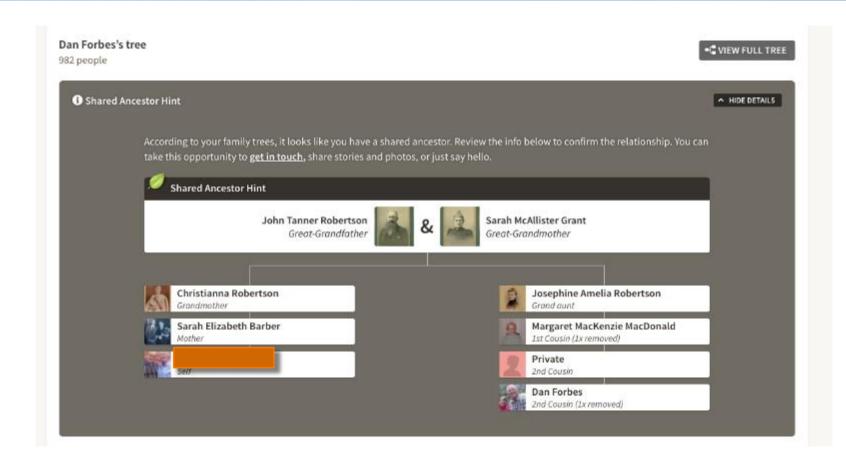
# Ancestry.com "Circles"

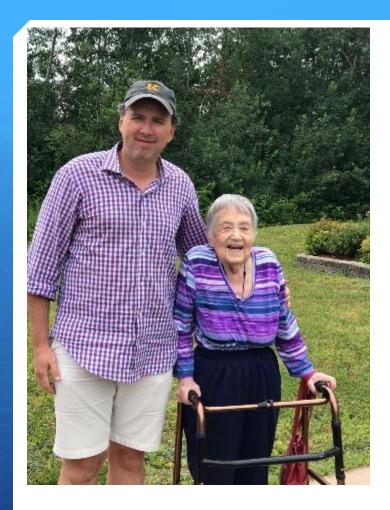


# Ancestry DNA.com "Circles"



### Dan Forbes and Robert Smith





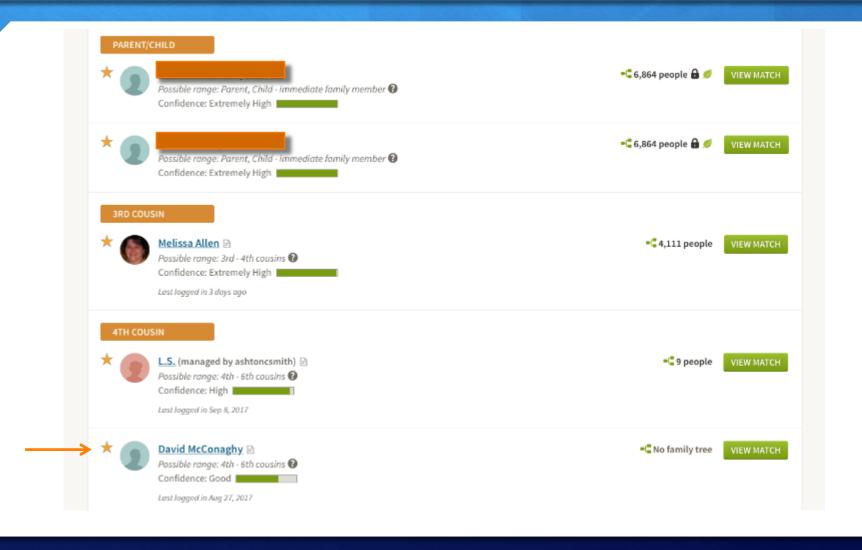
August 2017: Robert Kisilywicz and Phyllis Forbes 2<sup>nd</sup> cousins 2x removed



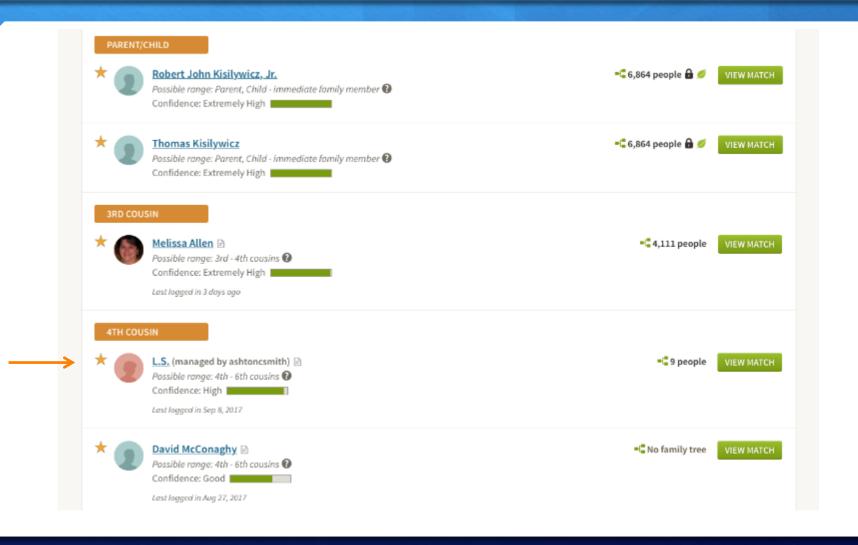


### Maiden Name Roadblock

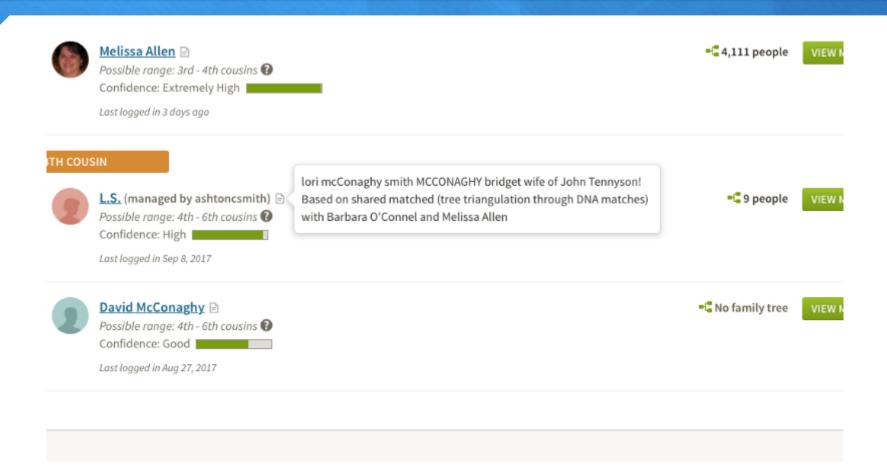
# Maiden Name Roadblock: Shared Matches "Barbara"



# Maiden Name Roadblock: Shared Matches "Barbara"



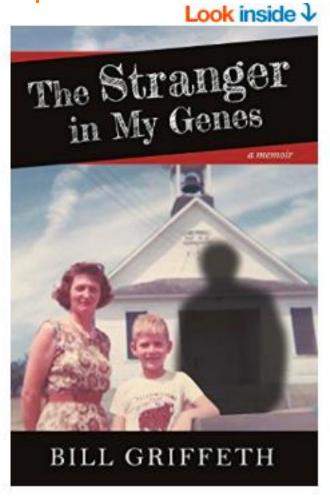
### Another McConaghy



### McConaghy Roadblock

### **Pedigree Chart for** Name: Stenislaw Kisielewicz John Edmond Kisilywicz John Kisielewicz b: Abt. 1872 in Poland: Galicia b: 30 Apr 1896 in Poland m: m: Aft. May 1927 in Holyoke, d: Name: Hampden, Massachusetts, USA; his second/her first d: 21 Apr 1940 in Cumberland. Name: Maryanna Ruttkiewicz Providence, Rhode Island, USA b: Poland: Galicia / Galizien / Stanley Kisilywicz Halychyna; Poland b: 22 Aug 1928 in Cumberland, Name: Providence, Rhode Island, USA; Memorial Hopsital m: Abt. 1951; Sept 24 **Powet Moskal** John Moskal d: 13 Mar 2004 in Wakefield. Washington, Rhode Island, USA; Tekla Moskal b: Abt. 1870 in Austria Found by his son, Stanley, Jr. m: 12 Feb 1900 in Holyoke, Hampden,... b: 01 Mar 1903 in Massachusetts. d: 1939 in Holyoke, Hampden, Massach... Katie Barlos d: 20 Dec 1981 in Cumberland, Providence, Rhode Island, USA; 77 **Apolonia Hospod** John Hospot b: Abt. 1882 in Poland d: 1968 in South Hadley. John Edmond Kisilywicz Hampshire, Massachusetts, USA; Kate Statz 86; Mater Dolorosa Cemetery b: 18 Sep 1951 m: 1970 in East Greenwich, Kent, Rhode Island, USA; Wickford Joseph Edmond Leonard Bernard **Edmond Joseph Bernard Baptist Church** Edmond Joseph Bernard Jr. b: 12 Oct 1867 in Kamouraska, Quebec... m: 30 Nov 1886 in Central Falls. Provide... b: 26 May 1892 in Central Falls. d: 14 Jun 1944 in Central Falls. Providen... **Eleanore Perrault** Providence, Rhode Island, USA: 3rd m: 24 Feb 1914 in Pawtucket. Providence, Rhode Island, USA; Andre Dupuis **Delia Dupuis** Priest: L.J. Deady d: 12 Aug 1952 in Pawtucket, b: Mar 1863 in Québec. Quebec. Canada Shirley Rita Bernard Providence, Rhode Island, USA; 52; d: 25 Jan 1903 in Central Falls, Providen... 128 Pond Street b: 10 Nov 1928 in Pawtucket. Aurelia Laberge Providence, Rhode Island, USA: 4th child; Dr. W. Mahoney d: 12 Oct 1984 in Wakefield. Name: Washington, Rhode Island, USA; John J. Tennyson 55; South County Hospital Sarah Anne Tennyson b: Bef. 1831 in Antrim, Antrim, Northern Ir... m; Abt. 1890 in Leitrim. Ireland; based o... b: 1892 in Leitrim, Ireland d: Bef. 17 Oct 1923 in Antrim. Antrim. No... d: 08 Mar 1975 in Pawtucket. Name: Providence, Rhode Island, USA: 85: Oak Hill Nursing Home Father McConaghy **Bridget McConaghy** b: 1865 in Ireland d: Antrim, Antrim, Northern Ireland Name:

# Additional Techniques to prove MRCA



- + Test more people/lines
  - + Form specific research questions
  - + Wait for email offers
- + Expand your outlets
  - Upload to
     MyHertigage.com and/or
     GEDMatch.com
- + Be prepared for rejection

### Conclusion

- + GPS or Genealogical Proof Standards requires "exhaustive" research, supporting the use of DNA as another resource
- + The strength of any conclusion resulting from correlation and assembly of DNA and other evidence can be evaluated utilizing the Genealogical Proof Standards.
- + DNA, when properly interpreted, is undisputable.
- + atDNA matches can open private collections you would never discover.

### Suggested Reading

- + Bettinger, Blaine "Genetic Genelogy in Practice" National Genealogical Society. Arlington, VA. 2016.
- + Griffeth, Bill. "Stranger in My Genes: A Memoir" New England Historic Genealogical Society. Boston, MA. September 2016
- + "Logic for Genealogists" B. Darrell Jackson, PhD, CG. National Genealogical Society Quarterly. (March 2017) 15: 31-42.
- + Mukherjee, Siddhartha. "The Gene: An intimate History" Scribner. New York, NY. 2016
- + Kenneally, Christine. "The Invisible History of the Human Race: How DNA and History Shape Our Identities and Our Futures" Viking. New York, NY. 2014
- + Manco, Jean. "Ancestral Journeys: The Peopling of Europe from the First Venturers to the Vikigns" Thames & Huson Ltd. London, England. 2013
- + Extreme Genes Podcast. "DNA Higher Education: CentiMorgans and Segments" Paul Woodbury and Scott Fisher. Episode 207. (<a href="http://extremegenes.com/episode-207-dna-higher-education-centimorgans-and-segments-houses-in-photographs/">http://extremegenes.com/episode-207-dna-higher-education-centimorgans-and-segments-houses-in-photographs/</a>) 2017
- + Bettinger, Blaine. "The Genetic Genealogist"