

# INVESTIGATIVE GENETIC GENEALOGY WORKSHOP: A CASE STUDY

The Trial



**Mitch Morrissey**  
Denver District Attorney 2005-2017  
Chief of Operations - United Data Connect



United Data Connect

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# United Data Connect



# United Data Connect

- We use DNA evidence found in cold cases to give law enforcement leads which identify the perpetrator.
- We also use DNA from unidentified persons to identify them.



# Why DNA is Important

- **DNA evidence is found in the most violent crimes... Murders, Sexual Assaults, Sexual Assaults on Children.**
- **Women are the victims in 90% of crimes where DNA evidence is critical.**
- **The next largest percentage of victims are children.**
- **DNA exonerates the innocent.**









# INVESTIGATIVE GENETIC GENEALOGY SEARCHES

### Limitations of SNPs

- A useful forensic sample requires a lot of DNA - around 20 nanograms.
- The forensic sample must be a single source sample.
- Nature of the clients in the database.
- Cost - the harder cases are extremely expensive and may not result in a lead.




Today, 60% of Americans of Northern European descent - the primary group using these sites - can be identified through such databases, whether or not they joined one themselves.

Researchers believe that within a few years, 90% of Americans of European descent will be identifiable through their DNA.

The goal is to find someone who shares enough DNA to qualify as a third cousin or closer.

Most of us have at least 800 people, somewhere in the world, who fall into this category.







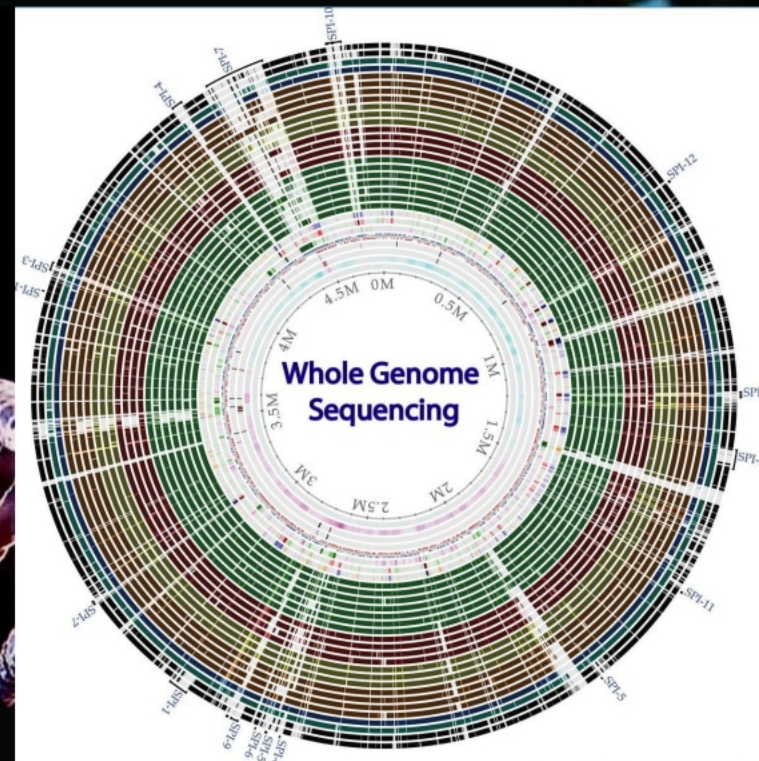
Joseph James DeAngelo Jr. - The Golden State Killer

The serial killer and rapist who committed at least 13 murders, 50 rapes, and 120 burglaries across California between 1973 and 1986.

IGG led to DeAngelo's arrest in April of 2018. He was sentenced to 12 life sentences.



# Sequence the DNA





# Upload DNA Data



**The goal is to find someone who shares enough DNA to qualify as a third cousin or closer.**

**Most of us have at least 800 people, somewhere in the world, who fall into this category.**



# Build the Family Trees



**METRO DENVER**

**CRIME**

**STOPPERS**



United Data Connect



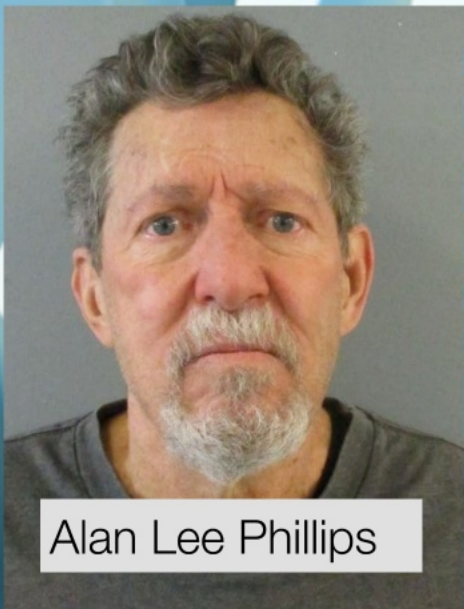
# Faces of the Victims







Barbara Oberholtzer and Annette Schnee



Alan Lee Phillips

## Case Study: The 1982 Murders of Oberholtzer and Schnee



The defendant is innocent until proven guilty in a court of law beyond a reasonable doubt.

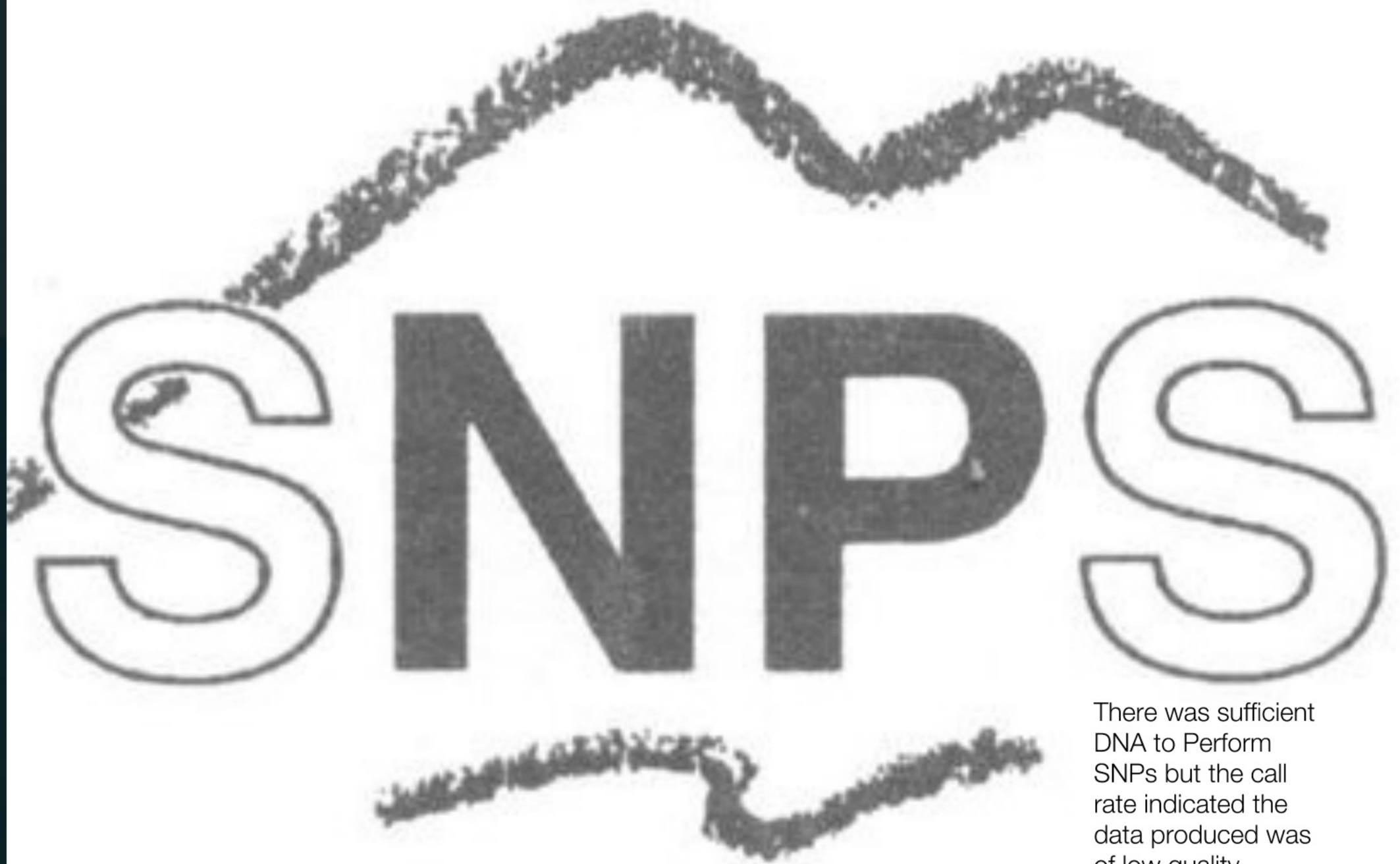






Barbara Oberholtzer's Bloody Glove





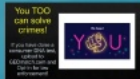
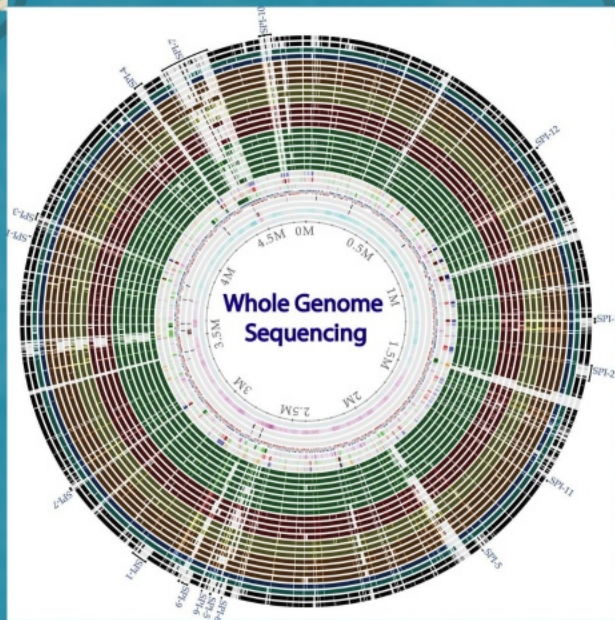
There was sufficient DNA to Perform SNPs but the call rate indicated the data produced was of low quality.

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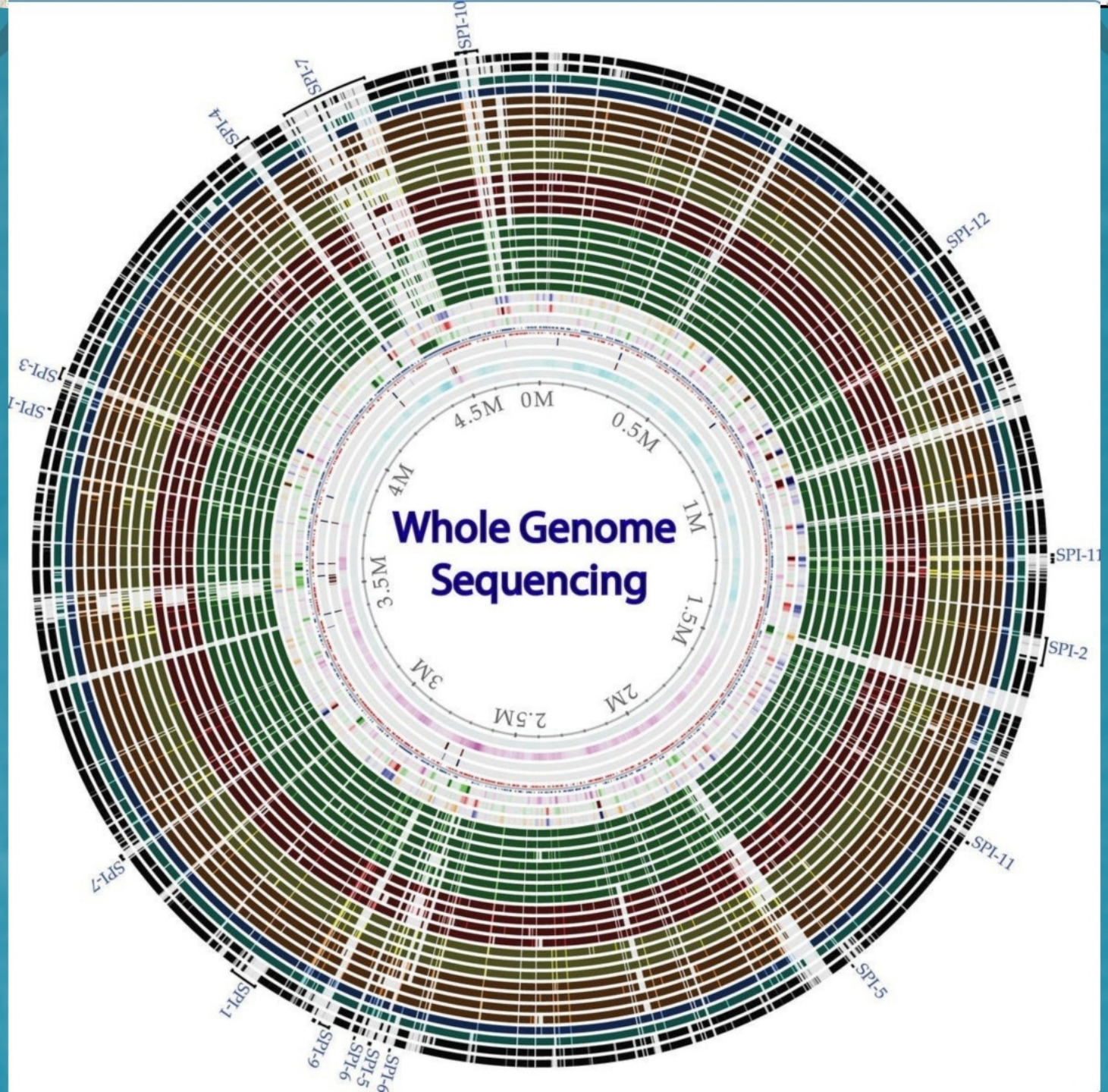




Chromosome	Start (Mb)	End (Mb)	Gene Count
1	0	248.84	2238
2	0	242.79	1282
3	0	198.84	1418
4	0	191.34	1043
5	0	182.61	1268
6	0	177.83	1151
7	0	132.57	1276
8	0	146.31	1151
9	0	133.57	1138
10	0	135.51	1282
11	0	135.43	1282
12	0	133.57	1138
13	0	115.18	1138
14	0	104.27	1138
15	0	101.42	1138
16	0	90.32	1138
17	0	78.22	1138
18	0	67.12	1138
19	0	56.02	1138
20	0	44.92	1138
21	0	33.82	1138
22	0	22.72	1138
23	0	11.62	1138
24	0	0.52	1138









**Hoosier Pass - where Bobbi Jo's body was found the next day.**

**Where Annette's body was found 6 months later (and**

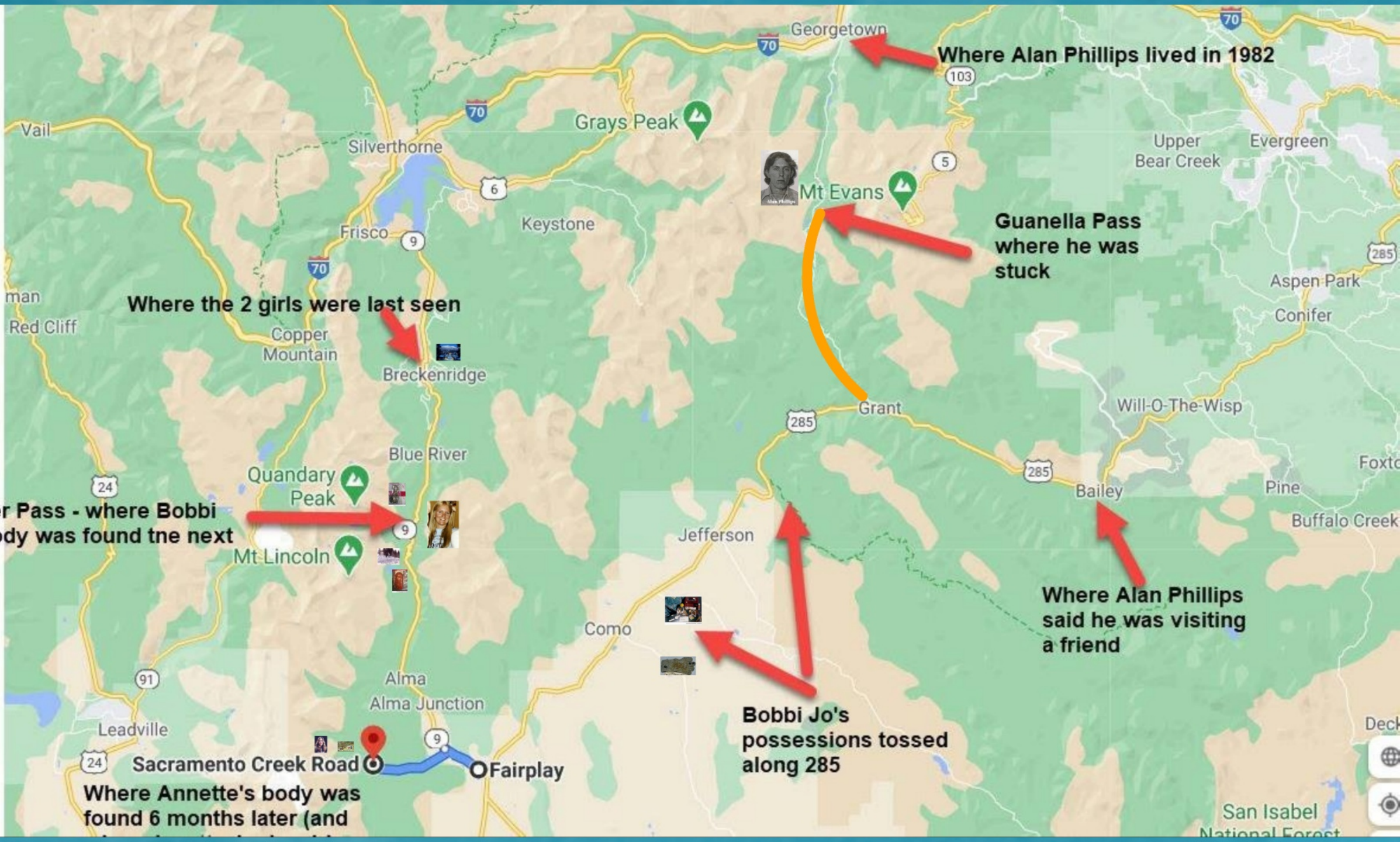
**Where Alan Phillips lived in 1982**

**Guanella Pass where he was stuck**

**Where Alan Phillips said he was visiting a friend**

**Bobbi Jo's possessions tossed along 285**

**Where the 2 girls were last seen**





Were last seen

er  
tain

Breckenridge









**Hoosier Pass - where Bobbi Jo's body was found the next day.**







CRIME SCENE: BOBBIE JO OBERHOLTZER JAN 7 1982

(Case File Photo)



OBERHOLTZER KEY RING WITH HOOK







SCHNEE ORANGE BOOTIE FOUND  
CREDLITZER CRIME CO





Leadville

Alma

Alma Junction

24

Sacramento Creek Road

9

Fairport

**Where Annette's body was found 6 months later (and**







Schwarz - Left shoe + sock

LEFT SHOE ORANGE BOOTIE





Schnuer - left shoe & sock

LEFT SHOE ORANGE BOOTIE



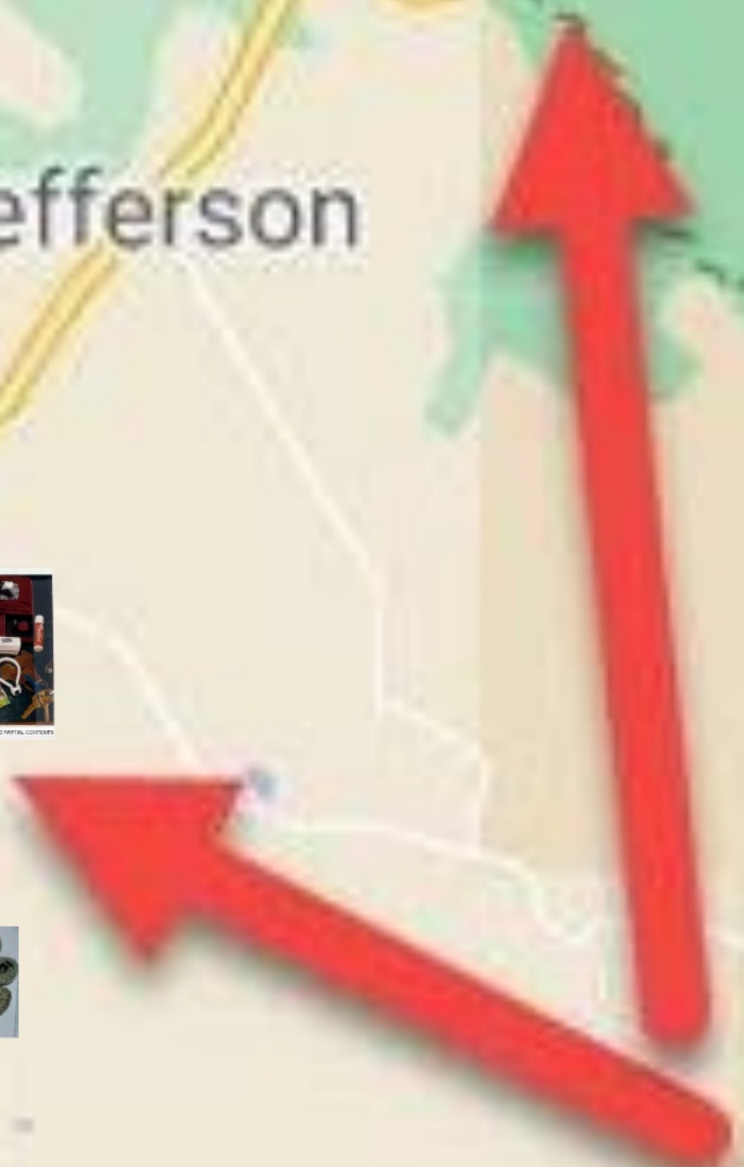


**Fairplay**

9

Jefferson

Como







BACKPACK AND PARTIAL CONTENTS



EVIDENCE

6.00y (blue) 82-0000





Mt Evans

5

Upper  
Bear Creek

Evergree

**Guanella Pass  
where he was  
stuck**

Aspen

Conif

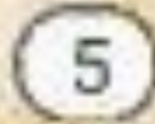
285

Grant

Will-O-The-Wisp



Mt Evans

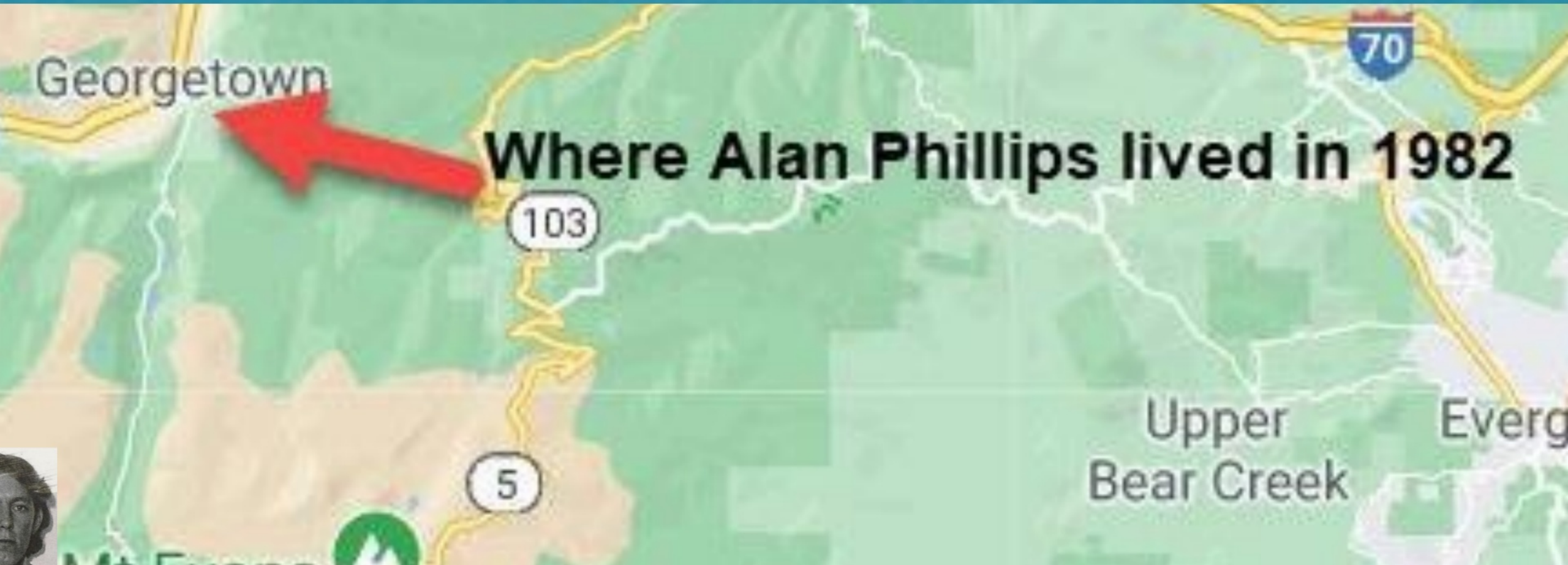


**Guanella Pass  
where he was  
stuck**





**Alan Phillips**



Georgetown

**Where Alan Phillips lived in 1982**

103

70

5

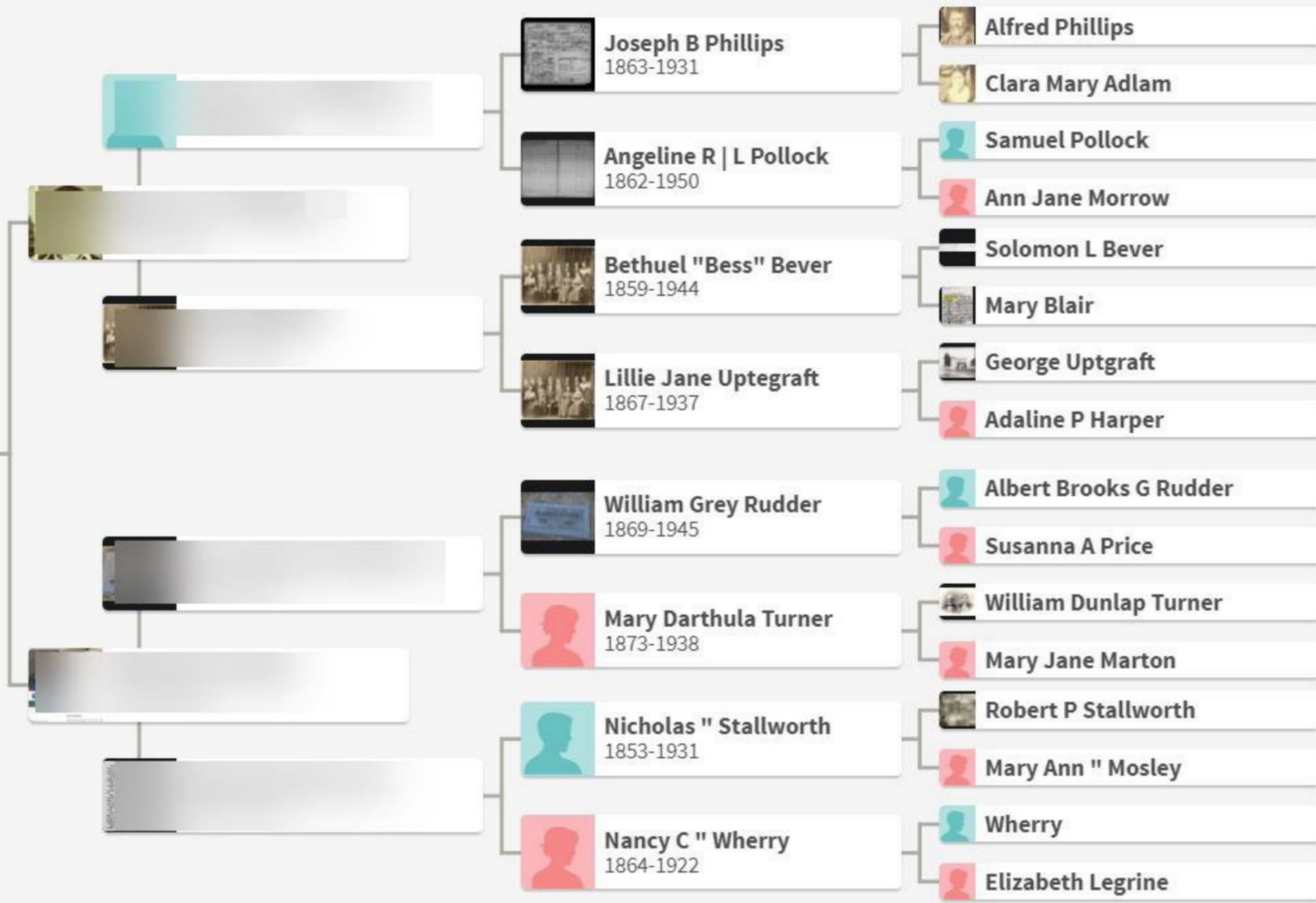
Upper  
Bear Creek

Everg





# Actual Public Tree of the Michigan Historian after he filled in his tree!



*The defendant is innocent until proven guilty in a court of law beyond a reasonable doubt.*



After an investigative lead has  
been identified. . .  
CODIS confirmation is still  
required





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# Questions

