

University at Albany, State University of New York

Scholars Archive

University Libraries Faculty Scholarship

University Libraries

11-16-2019

Catching Killers with Consumer Genetic Information

Angela Hackstadt

University at Albany, State University of New York, ahackstadt@albany.edu

Follow this and additional works at: https://scholarsarchive.library.albany.edu/ulib_fac_scholar



Part of the [Criminology and Criminal Justice Commons](#), [Evidence Commons](#), and the [Forensic Science and Technology Commons](#)

Recommended Citation

Hackstadt, Angela, "Catching Killers with Consumer Genetic Information" (2019). *University Libraries Faculty Scholarship*. 123.

https://scholarsarchive.library.albany.edu/ulib_fac_scholar/123

This Presentation is brought to you for free and open access by the University Libraries at Scholars Archive. It has been accepted for inclusion in University Libraries Faculty Scholarship by an authorized administrator of Scholars Archive. For more information, please contact scholarsarchive@albany.edu.

Catching Killers with Consumer Genetic Information

Angela Hackstadt
University at Albany, SUNY

NYLA Annual Conference
November 16, 2019 | Saratoga Springs, NY

“Golden State Killer”

The arrest that started it all

- Arrested in April 2018
- *I'll Be Gone in the Dark*
- Combined DNA Index System (CODIS)
- Familial DNA Searching
- Direct-to-consumer (DTC) genetic testing companies

Outline

- History
- Legal Issues
 - DNA profiling of convicted persons
 - Familial DNA searching
 - DTC genetic testing
- Social Issues
 - Family as a social unit
 - Belonging to a community

Forensic Genealogy

- Known relative(s) of an individual
- Work backward to find a common ancestor
- Narrow down a family tree
- DNA alone does not identify people
 - Census, birth, death, land records
 - Newspaper articles
 - Other information

Identifying the Romanov Family



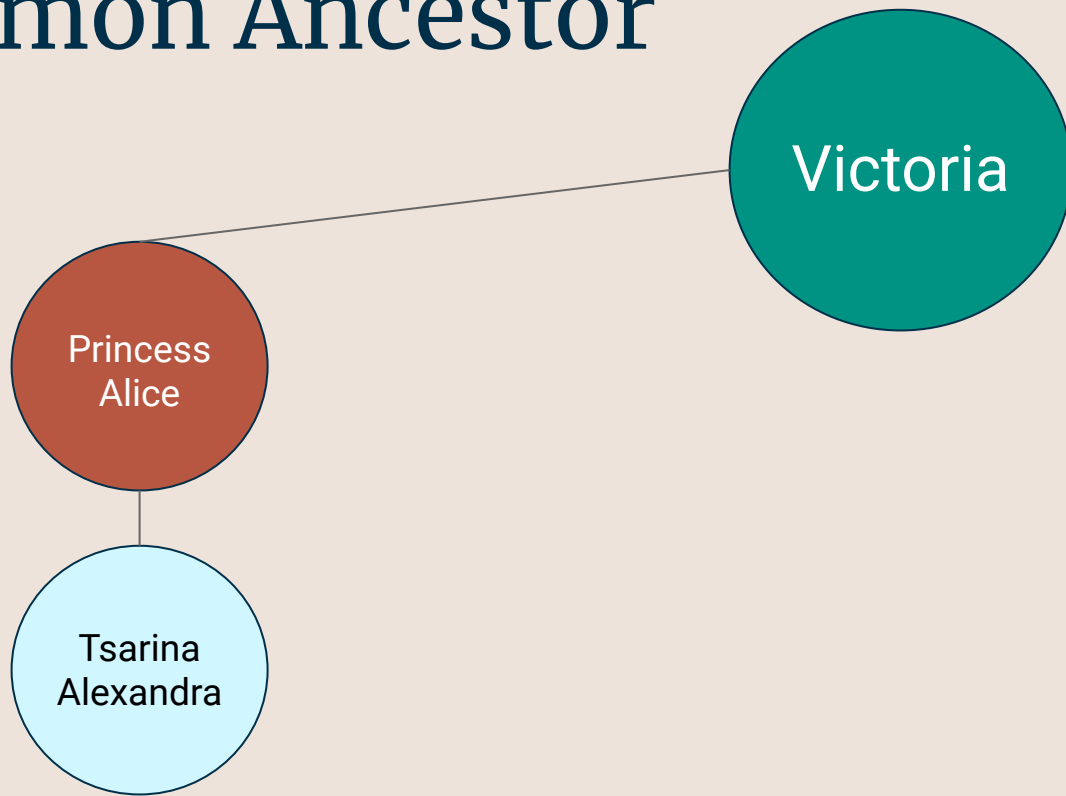
The Russian Imperial Family, 1914

mtDNA

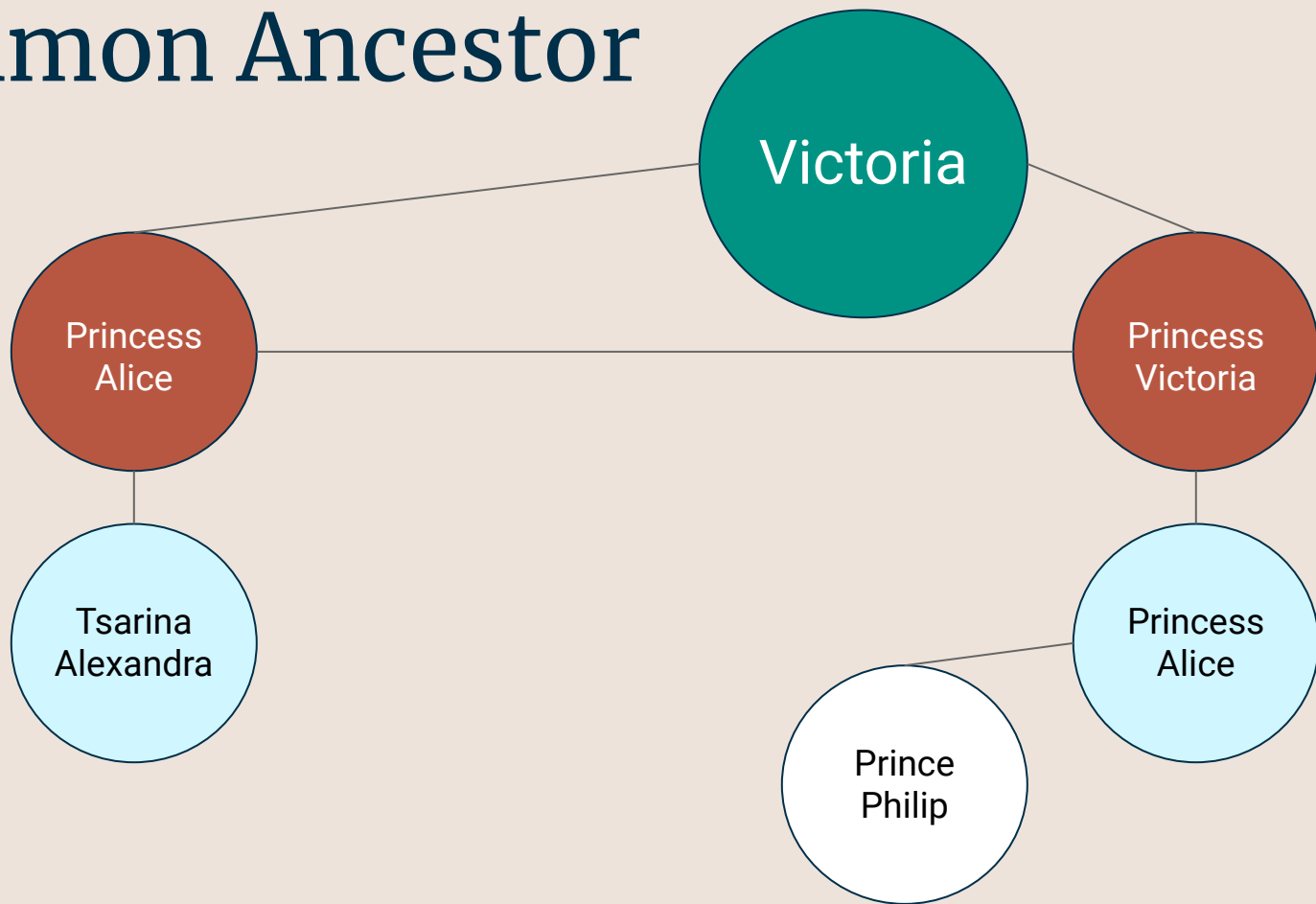
Mitochondrial DNA



Common Ancestor



Common Ancestor



Other information

- Location
- Injuries
- Age and sex
- Dental work

Y-STR

Y Chromosome Short Tandem Repeats



“Buckskin Girl”

Identifying Victims

- April, 1981
- Miami County, Ohio
- DNA Doe Project
 - dnadoeproject.org
- GEDMatch

Marcia King

Identifying Victims

- April, 1981
- Miami County, Ohio
- DNA Doe Project
 - dnadoeproject.org
- GEDMatch

Identifying Victims

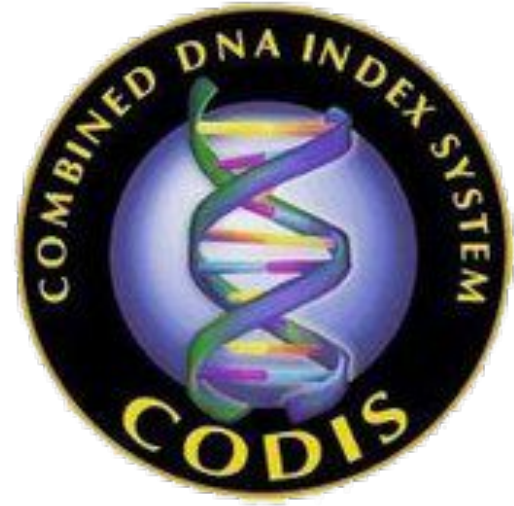


Identifying Victims

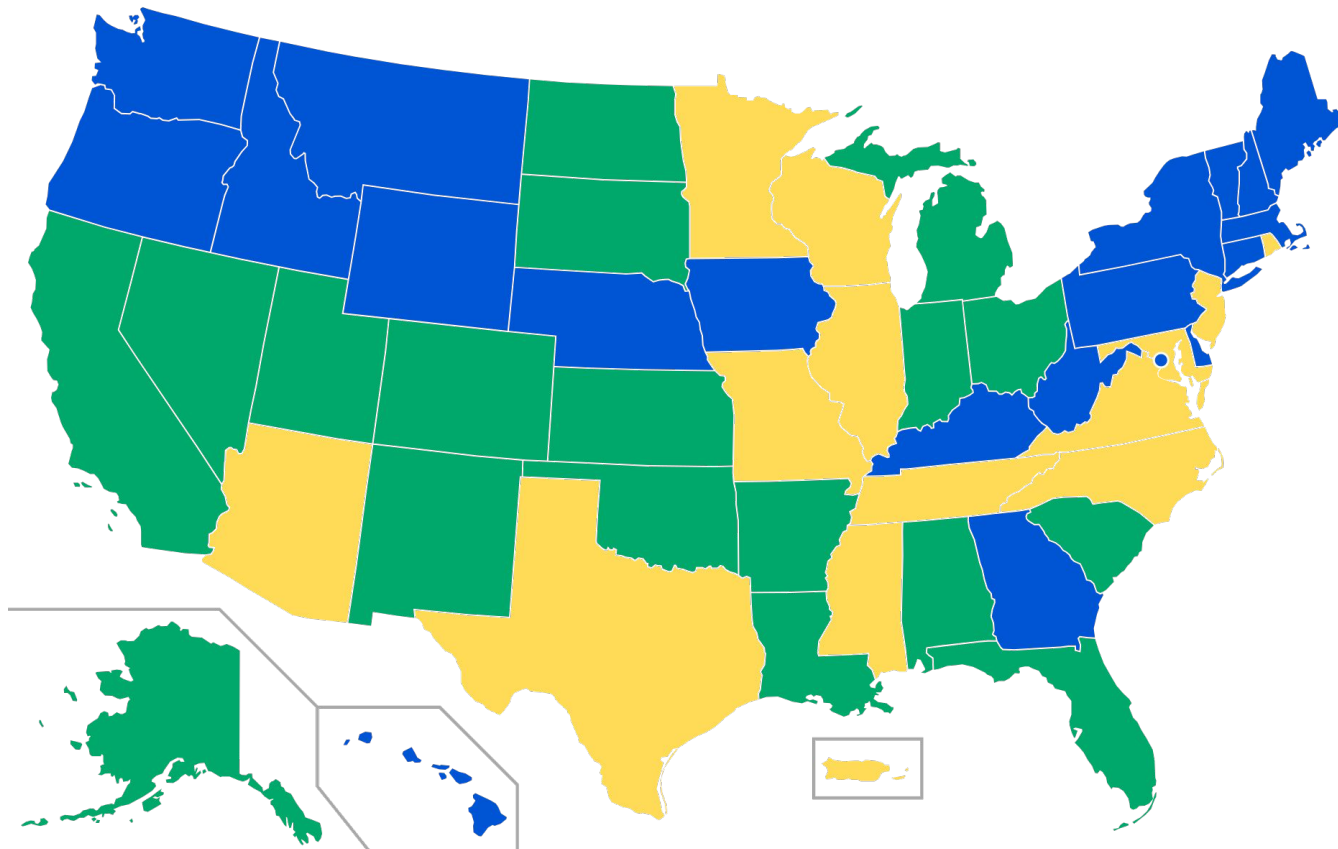
Identifying Perpetrators

CODIS

As Seen on TV



DNA Collection by State (2018)



Collection Controversy



Familial DNA Searching of Law Enforcement Databases

YES

- Arkansas
- California
- Colorado
- Florida
- Michigan
- Texas
- Utah
- Virginia
- Wisconsin
- Wyoming
- Ohio (pilot program)

No

- Maryland
- District of Columbia

Familial DNA Search

“Familial searching is an intentional or deliberate search of the database conducted after a routine search for the purpose of potentially identifying close biological relatives of the unknown forensic sample associated with the crime scene profile”

The Grim Sleeper

Los Angeles, California



[South Central Los Angeles CC-BY 2.0](#)

State & Federal DNA Databases

- Valuable resources for law enforcement
 - Victims
 - Missing persons
 - Perpetrators
- Highly regulated
- Communication
- Collection issues are possible
- Debates continue

Let's put it in a box and sell it!

Top 3 for Genealogy

*The Family Tree Guide to DNA Testing
and Genetic Genealogy, Blaine Bettinger*

23 and Me

Family Tree DNA

Ancestry.com

Genetic Genealogy Standards

- www.geneticgenealogystandards.com
- Understanding companies and terms
- Necessity of consent
- Data handling
- DNA storage
- Unexpected results

Now What?

What do you do with your results?



Angie Dodge

Part I



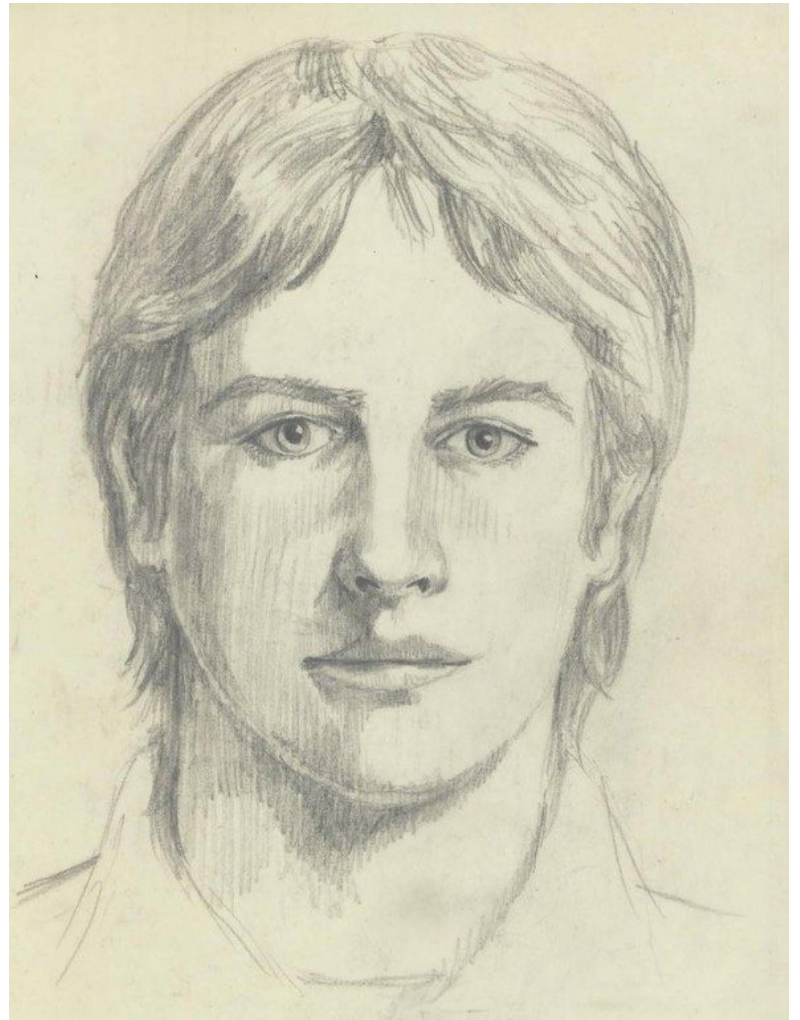
[DNA Evidence](#) [CC-BY-SA 4.0 International](#)

Third Party Services

- DNA GEDCom
- GEDMatch
- Raw DNA data
 - A-C-G-T nucleotides
- Company-neutral comparisons

The Arrest

Joseph James D'Angelo



William Earl Talbott II

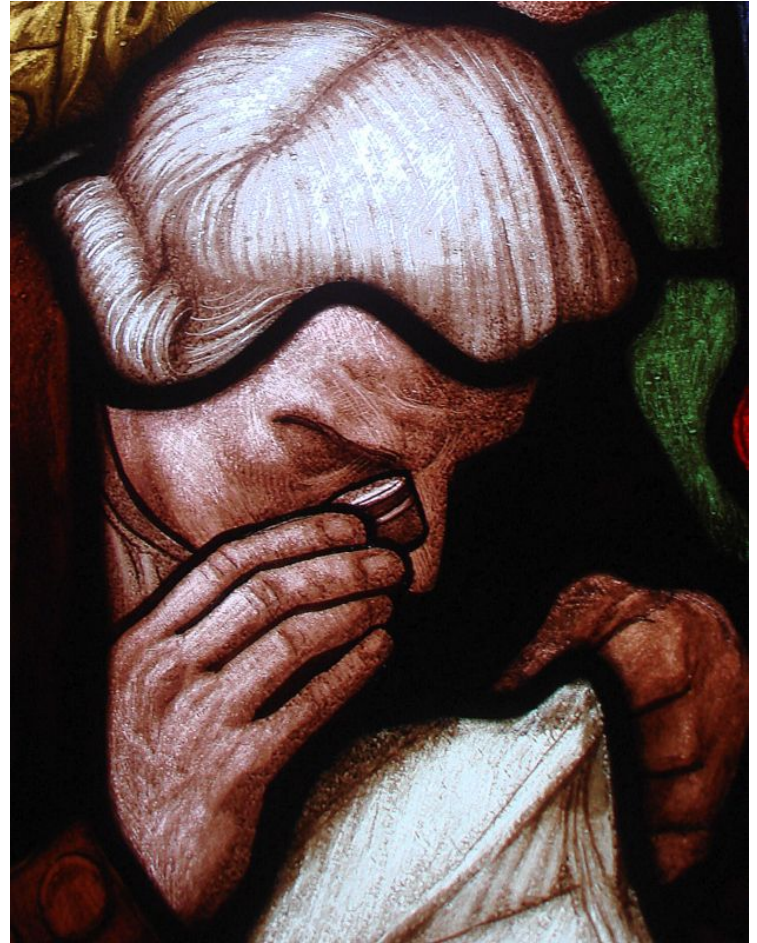
- Same genetic genealogy technique used in GSK investigation
- First to be tried
- First convicted

Angie Dodge

Part II

- Brian Dripps arrested May 2019
- Genetic genealogy

Updated Terms of Service



“Downright gobsmacked”

Reasonable
expectation of
privacy?



Social Issues: Family



[Broken Glass, Rodrigo Paredes CC-BY 2.0](#)

Social Issues: Community



Recommended Reading (and listening)

- *Genetic Genealogy in Practice*, Blaine Bettinger & Debbie Parker Wayne (2016)
- *The Family Tree Guide to DNA Testing & Genetic Genealogy*, Blaine Bettinger (2016)
- *Inside the Cell: The Dark Side of Forensic DNA*, Erin Murphy (2015)
- *Native American DNA*, Kim Tallbear (2013)
- *All My Relations* podcast, Matika Wilbur & Adrienne Keene (2019)
 - Episode 4: Can a DNA Test Make Me Native American?
 - Episode 10: Beyond Blood Quantum

All images are in the Public Domain unless otherwise indicated.

The bibliography & complete list of images for this presentation
are available upon request.

Thank You!