11-16-2019

Catching Killers with Consumer Genetic Information

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Recommended Citation

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

Victoria

Princess Alice

Tsarina Alexandra
Common Ancestor

Victoria

Princess Alice

Tsarina Alexandra

Princess Victoria

Princess Alice

Prince Philip
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
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
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!
Genetic Genealogy Standards

- [www.geneticgenealogystandards.com](http://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
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)

- *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
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Thank You!