



Unmixing, Uploading and Connecting DNA Evidence: TrueAllele® Technology

Illinois Juvenile Officers Association (IJOA)
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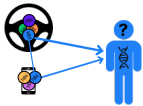



Cybergenetics © 2003-2025

1

TrueAllele technology

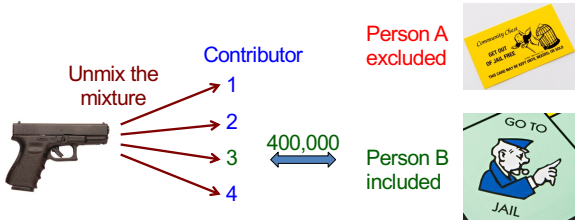
Lab: Inconclusive or "uninterpretable" DNA mixture
Cybergenetics TrueAllele can **unmix the mixture**
Match statistics provide **connection information**



2

Juvenile gangs

Lab: Inconclusive or "uninterpretable" DNA mixture
Cybergenetics TrueAllele can **unmix the mixture**
Match statistics provide **connection information**



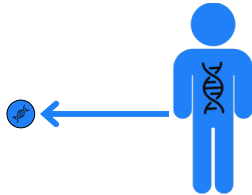
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People have DNA



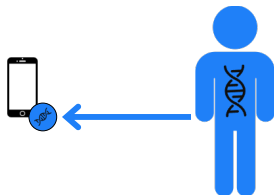
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People leave DNA

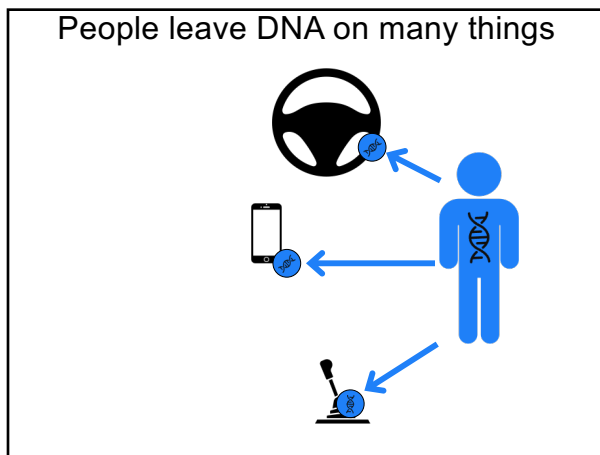


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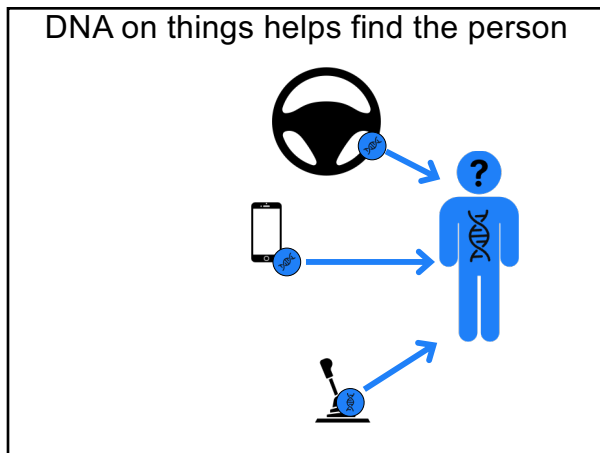
People leave DNA on things



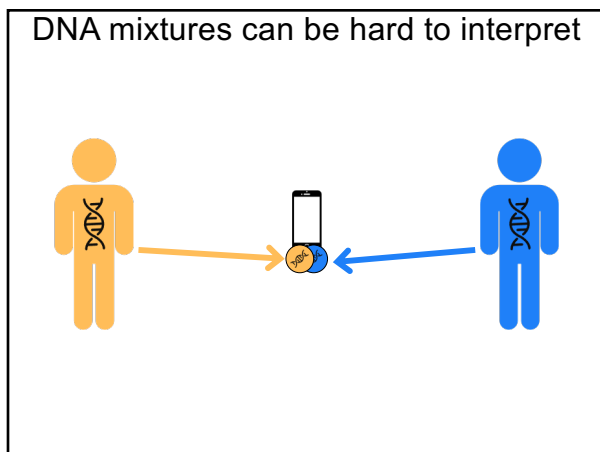
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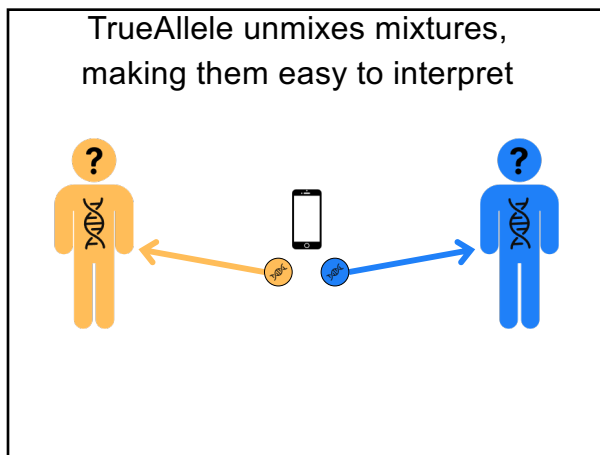
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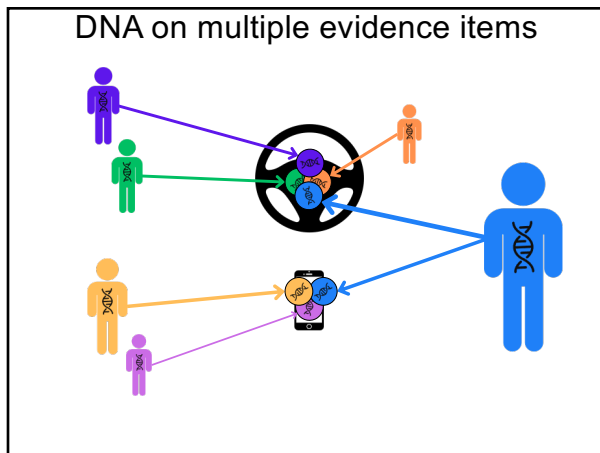
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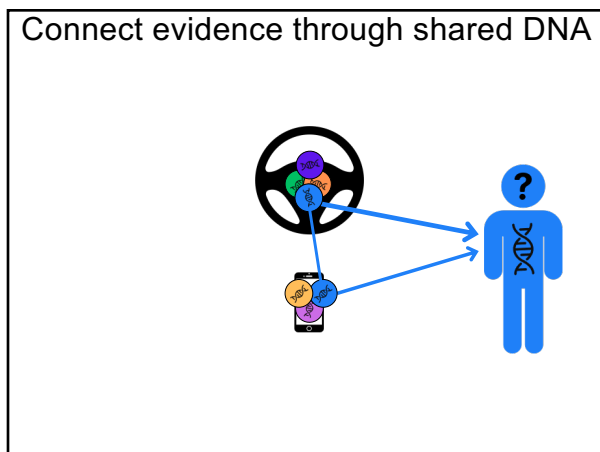
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11



12

“Handprints in the morning dew”

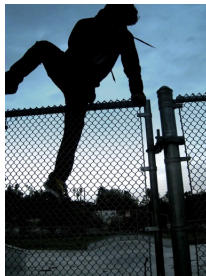


State of Louisiana v. Hilton Wilson
and Reokenski Thomas

13

13

The crime



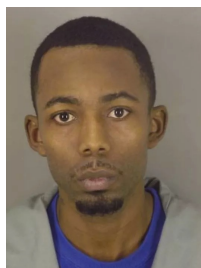
- July 22, 2013 in Ville Platte, LA
- Shots heard on East Washington Street
- Joseph & Derrick John

14

14

The crime

- That night, Joseph John dies in the hospital
- 3 months later, Derrick John makes identification
- Reokenski Thomas becomes a suspect



Reokenski Thomas₁₅

15

The investigation

- Shooting was precipitated by an earlier argument
- Shell casings and bullet in victim
- Footsteps on grass lead up to fence



16

The evidence: An example of great investigative work



- Detective on scene swabbed two handprints
 - that disturbed the morning dew

17

Exhibit 13: Swab from post running north and south – A

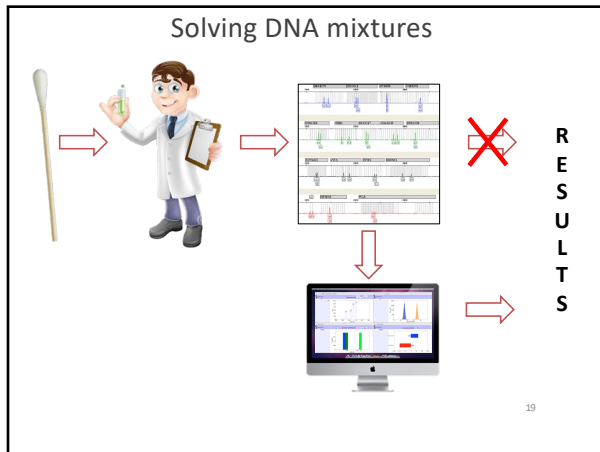
"Due to the limited nature of the profile, **no conclusions** regarding the inclusion or exclusion of any contributor can be made."

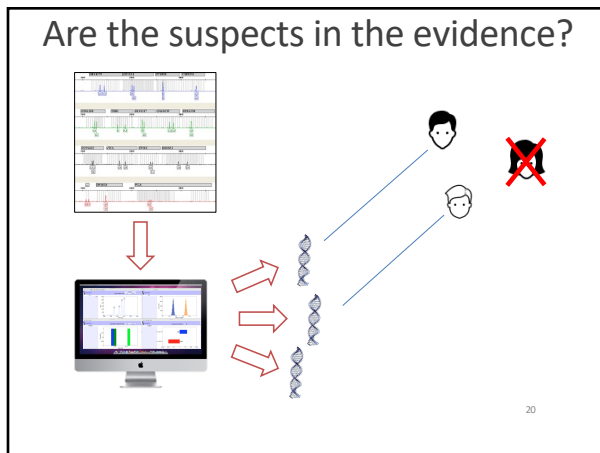
Exhibit 14: Swab from post running north and south – B

"...was consistent with being a mixture of DNA from **at least two individuals**. Due to the nature of the profile, no statistical analysis could be performed at this time. Therefore, **no conclusions** regarding Hilton Wilson and Reokenski Thomas can be made."

18

18





Match statistics

		19	20	21	27
Exhibit	Description	Hilton Wilson	Reokenski Thomas	Suspect C	Suspect D
13	post - A	70.9 thousand	335 thousand		
14	post - B	23.1 million	6.28 million		
13 & 14	posts - A & B	157 million	340 million		

21

21

DNA evidence in the courtroom

- Seven-day trial in Judge Chuck West's courtroom
- ADA Marcus Fontenot introduces DNA evidence
- On March 10, 2016, Dr. Mark Perlin testifies at the trial in Ville Platte, LA
- TrueAllele match statistics



22

22

Guilty verdicts handed down in Thomas-Wilson murder trial
Ville Platte Gazette

TrueAllele statistically matched the defendants' DNA to the DNA collected from the fence at the crime scene.

"After seven days of listening to eye witness and expert testimony, an Evangeline Parish Jury of 12 found Reokinski Thomas and Hilton Wilson guilty of *first degree murder* and *attempted first degree murder*."

Ville Platte Today

The prosecutors polled the jury after trial – the DNA was *crucial* in obtaining the convictions

23

23

Keys to success

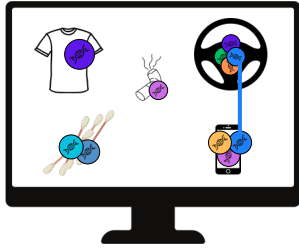
1. Evidence collection
2. Lab develops DNA
3. Lab sends data to Cybergenetics
4. TrueAllele match statistics
5. Expert testimony
6. Justice is served

- "DNA is key."
- - Investigator Marcus Aucoin

24

24

Evidence DNA Database



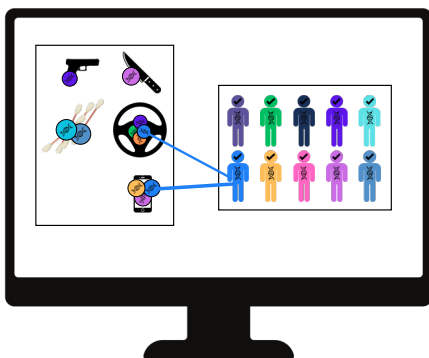
25

Reference DNA Database



26

DNA Database Connections



27

TrueAllele Database

- Unmix
- Upload
- Connect

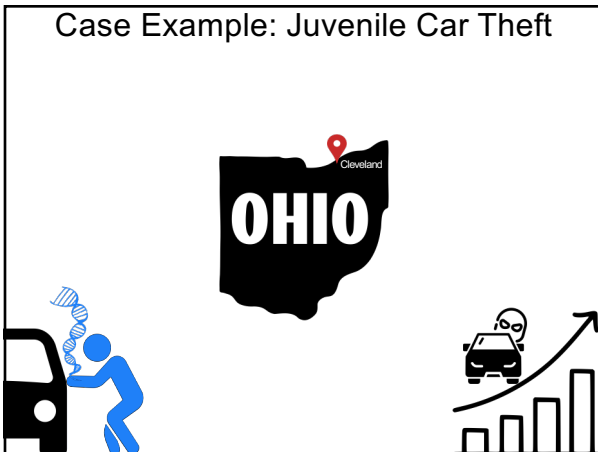
28

CODIS Database

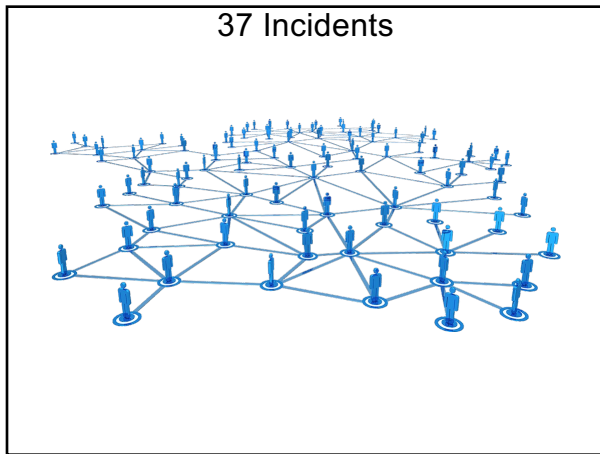
- x Unmix
- x Upload
- x Connect

29

Case Example: Juvenile Car Theft



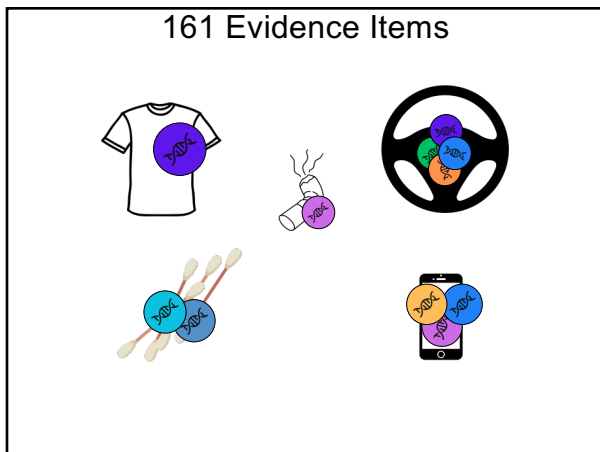
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31



32



33

72 References



34

CODIS Inconclusives

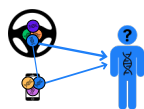
- 30 items thought to be 'inconclusive'

35

TrueAllele Connections

~~• 30 items thought to be 'inconclusive'~~

- Wrong!
- All 30 items had a connection



36

CODIS Exclusions

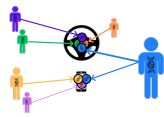
- 12 items thought to be exclusions

37

TrueAllele Connections

~~• 12 items thought to be exclusions~~

- Wrong!
- All 12 items had a connection



38

CODIS Time 🕒

- 2 months from DNA testing to report
 - +1 month for supplemental reports

39

TrueAllele Time

- ~~2 months from testing to report~~
- ~~1 month for supplemental reports~~
- 1 month from DNA upload to report

40

Power of the TrueAllele® Database

One example:
Database matched a
single suspect across 8
cases and 16 evidence
items

One suspect linked to eight cases		
Case	Item	Log(LR)
1	Steering Wheel	12.65
2	Steering Wheel	6.44
3	Steering Wheel	2.28
4	Flashlight	4.02
	Steering Wheel	16.04
	Steering Wheel	5.21
5	Cigar	6.36
	Steering Wheel	9.54
6	Ignition Key	2.33
	Gear Shift	5.99
7	Gear Shift	4.22
	Driver Door Handle	3.00
	Pass. Door Handle	4.55
8	Cigar	13.52
	Cigarette Butt	14.84
	Diplo Package	10.32

41

CODIS wasted time and information

- Much **TIME** to complete
- Few evidence **CONNECTIONS**



42

TrueAllele computer automation found the answers

- Much less **TIME**
- Many evidence **CONNECTIONS**
 - scene to scene
 - scene to suspect



43

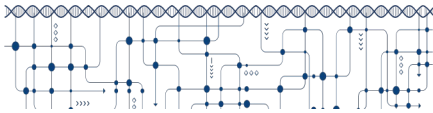
Increased Evidence Clarity

TrueAllele unmixed complex mixtures

- Unmixed mixtures into individual DNA
- Connected with reference and evidence

Case study

- Quickly got accurate and reliable results from “inconclusive” evidence



44

Benefits for Juvenile Investigators

Stronger leads, fewer dead ends

- Less inconclusive, more crimes solved
- Probative and reliable DNA evidence
- Deterrent + Improved clearance rates
- Reduces cost and man hours



45

Good consequences of better technology

Community benefits

- Early identification of repeat juvenile offenders
- Opportunity for intervention
- Fewer criminals on the street
- Better justice through better science



46

How we can help

When the crime lab says DNA evidence is:

- Uninterpretable
- Inconclusive
- Low level
- Too complex
- Too many contributors

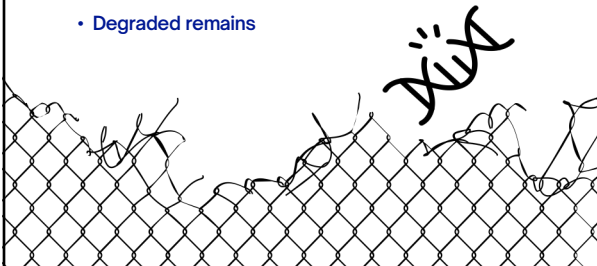


47

How we can help

With DNA cases that have:

- Partial profiles
- Familial mixtures
- Degraded remains



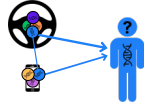
48

How we can help

Solve “uninterpretable” DNA evidence

Build you a better DNA database to:

- Unmix “uninterpretable” mixtures
- Upload all DNA evidence
- Connect evidence to suspects



49

Questions?



LEAVE YOUR INFO



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50
