

DNA Investigation: Across the Universe

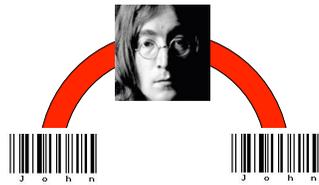
Pennsylvania Homicide Investigators Association
April, 2016
State College, PA

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Cybergenetics, Pittsburgh, PA

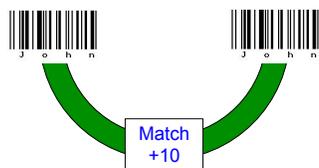


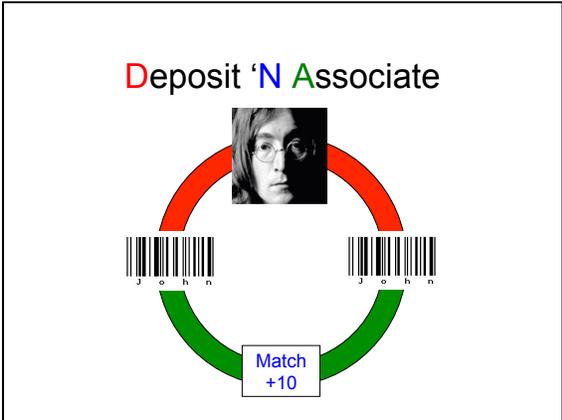
Cybergenetics © 2003-2016

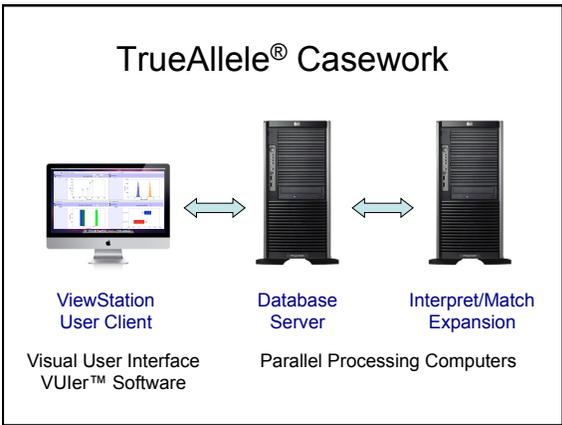
Deposit DNA

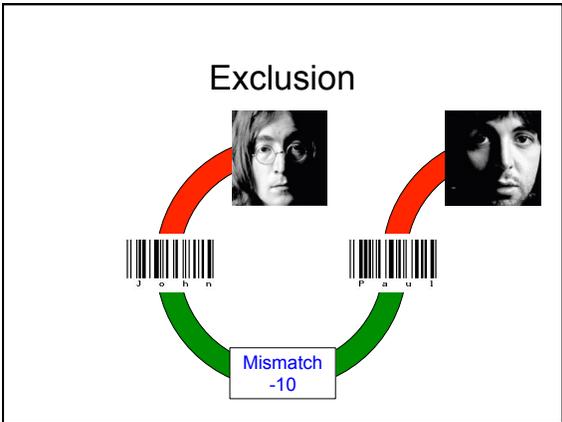


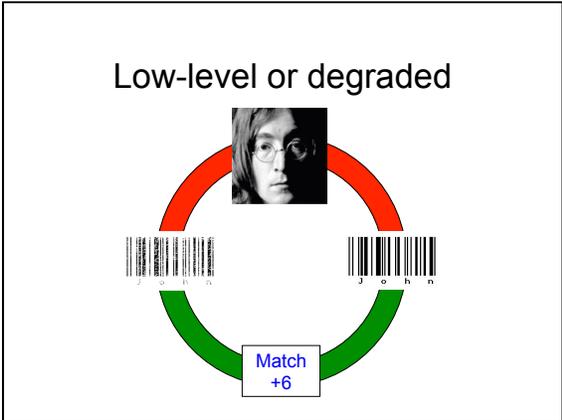
Associate DNA

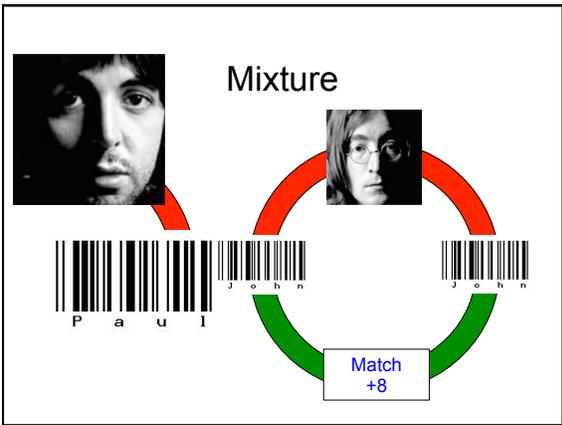












Inconclusive mixture

Crime laboratory DNA report
 Crime lab user fee: \$5,000

Conclusions:

Item 1 – Swab of textured areas from a handgun

The data indicates that DNA from four (4) or more contributors was obtained from the swab of the handgun. Due to the complexity of the data, **no conclusions can be made** regarding persons A and B as possible contributors to this mixture.

Computer reanalysis

Cybergentics TrueAllele® report
Match statistics provide information

Unmix the mixture

Contributor

1

2

3

4

Person A
excluded

400,000

Person B
included

Evidence to Evidence

Match
+8

Murder in McKeesport, PA

Mixture matches





 R i n g o


 R i n g o


 R i n g o


 J o h n




 G e o r g e


 F e l i x


 F e l i x

Match
+9

Match
+16

Mixture mismatches



				
		1	2	3
		9%	9%	81%
1	17%	-1.70	-1.67	-1.41
2	63%	-1.73	-1.52	9.35
3	20%	-1.19	-1.19	-0.26

Only Defendant deposited DNA to both items of evidence

Crime scene investigation





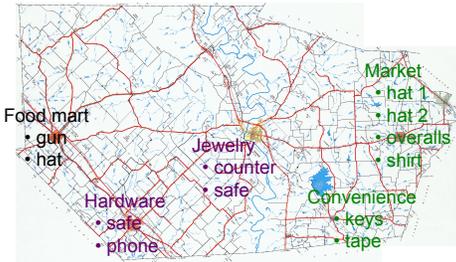

 J o h n R i n g o


 R i n g o G e o r g e



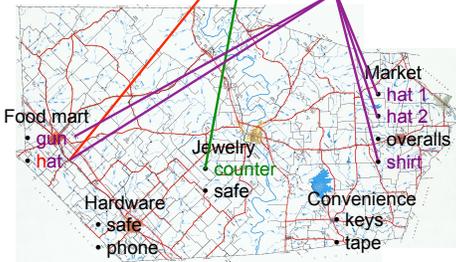

Match
+9

DNA left at 5 different scenes



Serial crime investigation

Suspects: S1, S2, S3, S4, S5



Pennsylvania v James Yeckel, Jr.

