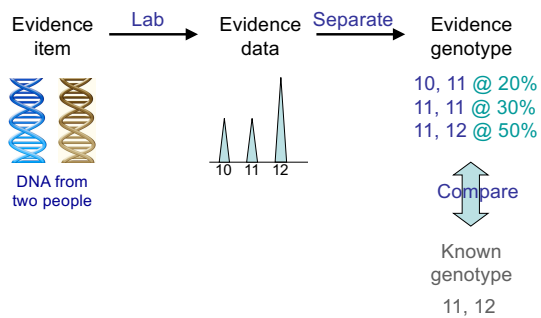


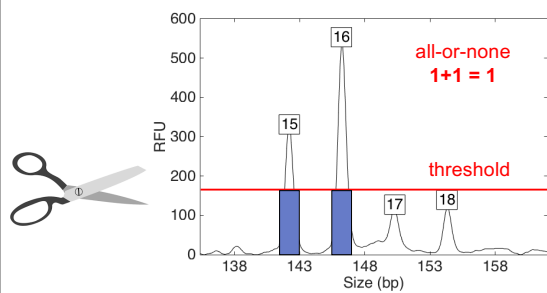
TrueAllele® computer technology

- Accurate. 34 validation studies, 7 published
- Objective. Workflow removes human bias
- Accepted. Reported in 37 states, used by labs
- Transparent. Give math, software (4GB DVD)
- Neutral. Can statistically include or exclude

DNA mixture interpretation



Crime labs don't use all DNA data

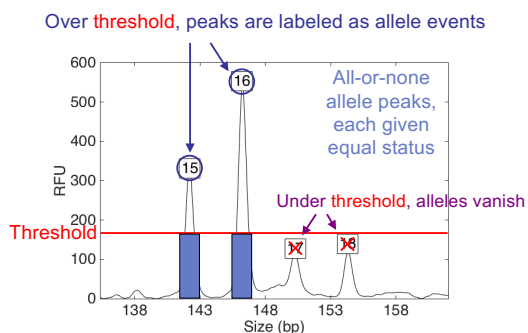


Wolfe sisters homicide



On February 6, 2014, Susan Wolfe (44) and her younger sister Sarah (38, left) were killed in their East Liberty home in Pittsburgh.

Crime lab didn't use all DNA data



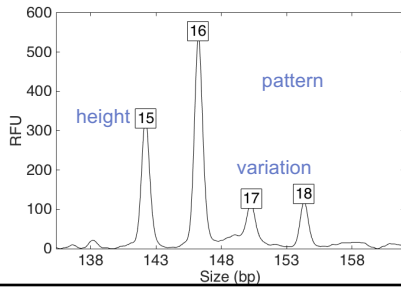
Pennsylvania v. Allen Wade

Thresholds failed to interpret most DNA mixtures

Hat	No conclusions
Cup	Insufficient data
Fingernails	Contamination, insufficient data
Gear shift	Insufficient data
Seat lever	Cannot be excluded
Knit hat	Insufficient data
Sock	Too complex, no conclusions

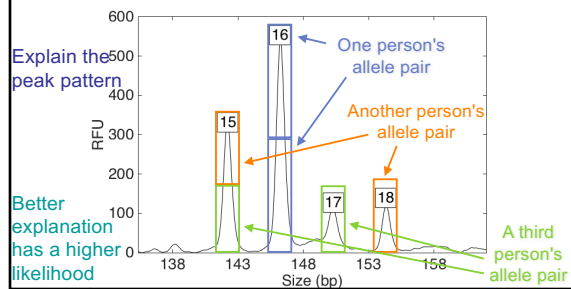
Computers can use all the data

Quantitative peaks at locus vWA



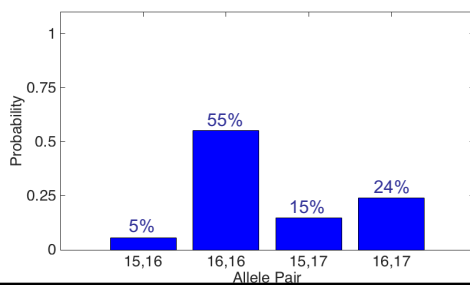
How the computer thinks

Consider every possible genotype solution



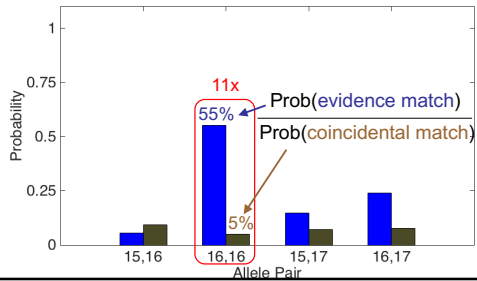
Evidence genotype

Objective genotype determined solely from the DNA data.
Never sees a comparison reference.

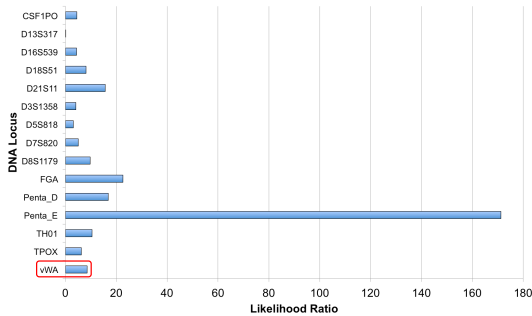


DNA match information

How much more does the **suspect** match the evidence than a **random person**?



Match information at 15 loci



Is the suspect in the evidence?

A match between the **right fingernails** and **Allen Wade** is:

6.06 trillion times more probable than a coincidental match to an unrelated **Black** person

32.5 trillion times more probable than a coincidental match to an unrelated **Caucasian** person

8 trillion times more probable than a coincidental match to an unrelated **Hispanic** person

Pennsylvania v. Allen Wade

The crime lab reported 5 DNA mixture matches
TrueAllele found 17 matches on the same data

Hat	65.3 thousand	Allen Wade
Cup	20.5 thousand	Susan Wolfe
Fingernails	6.06 trillion	Allen Wade
Gear shift	9.37 million	Sarah Wolfe
Seat lever	385 billion	Sarah Wolfe
Knit hat	25.7 thousand	Allen Wade
Sock	300	Sarah Wolfe

Allen Wade Found Guilty On All Counts In East Liberty Sisters' Slaying

CBS News, May 23, 2016

PITTSBURGH (KDKA/AP)

- A man accused of killing two sisters who lived next door to him in East Liberty has been found guilty on all counts.
- Allen Wade was accused of shooting Sarah and Susan Wolfe after they returned from work on Feb. 6, 2014, apparently to steal a bank card.
- On Monday morning, a jury found Wade guilty of first-degree murder, robbery, burglary and theft by unlawful taking.

Pennsylvania v. Allen Wade

Thresholds failed to interpret DNA mixture
TrueAllele succeeded on the same data

A hat left from a burglary of the Wolfe sister's home
six weeks before the murder matched
Allen Wade with a 65.3 thousand statistic



Preventable Crime
