

# Virginia TrueAllele® Validation Study: Casework Comparison

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## Case Composition

- 72 criminal cases
- 92 evidence items
- 111 genotype comparisons

### Criminal offense

- 18 homicide
- 12 robbery
- 6 sexual assault
- 20 weapon

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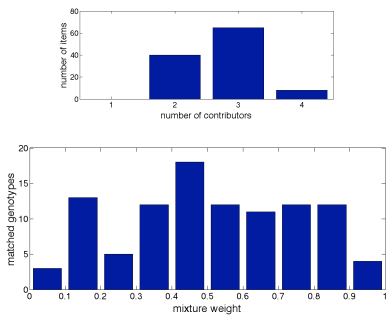
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## DNA Mixture Distribution



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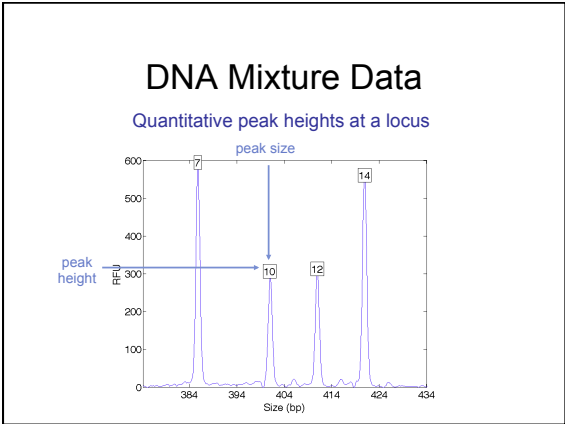
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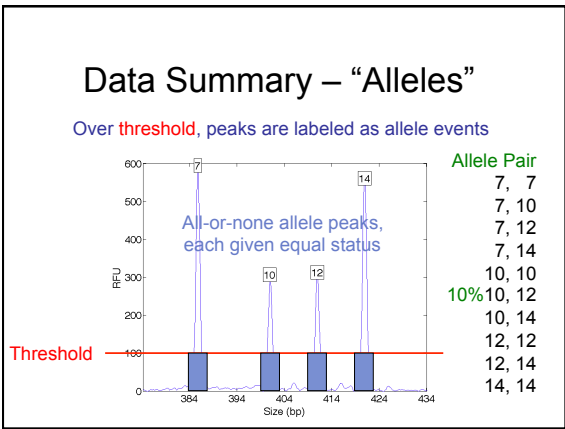
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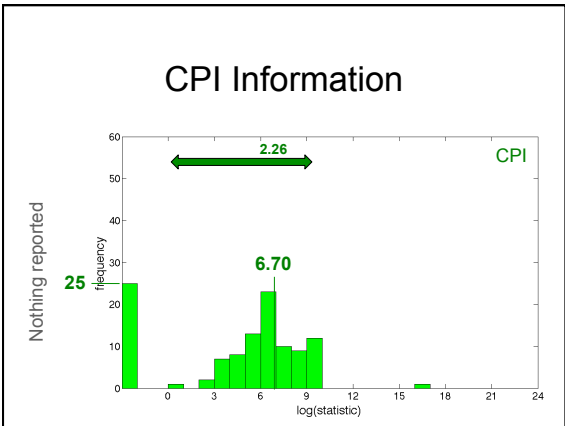
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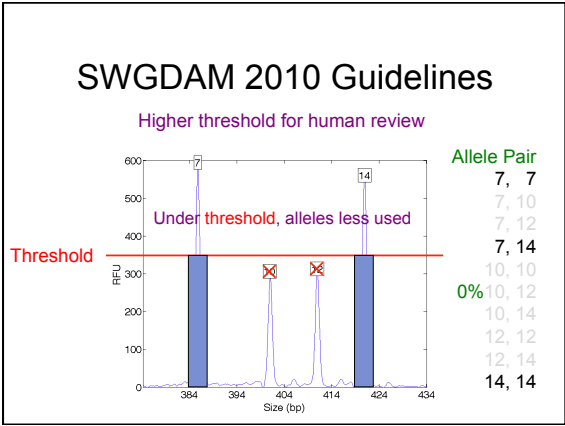
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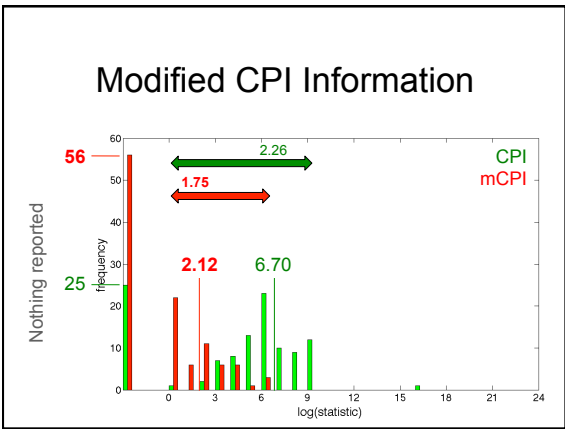
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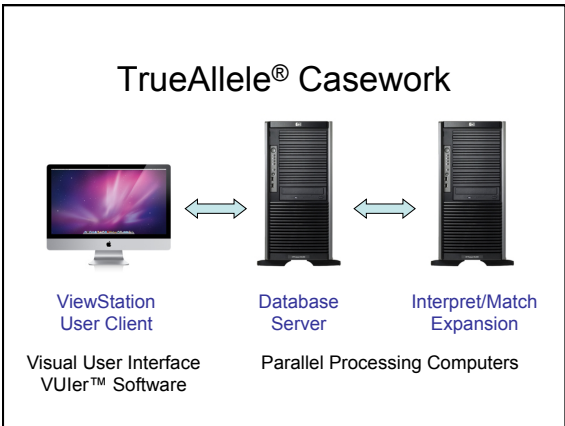
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## Validated Genotyping Method

Perlin MW, Sinenikov A. [An information gap in DNA evidence interpretation](#). *PLoS ONE*. 2009;4(12):e8327.

Perlin MW, Legler MM, Spencer CE, Smith JL, Allan WP, Belrose JL, Duceman BW. [Validating TrueAllele® DNA mixture interpretation](#). *Journal of Forensic Sciences*. 2011;56(6):1430-47.

Perlin MW, Belrose JL, Duceman BW. [New York State TrueAllele® Casework validation study](#). *Journal of Forensic Sciences*. 2013;58(6):in press.

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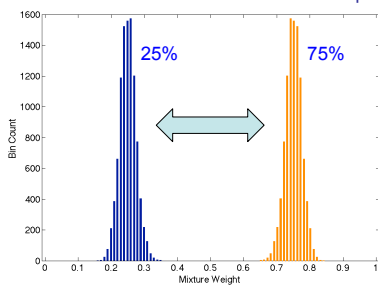
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## Mixture Weight

Separate mixture data into two contributor components




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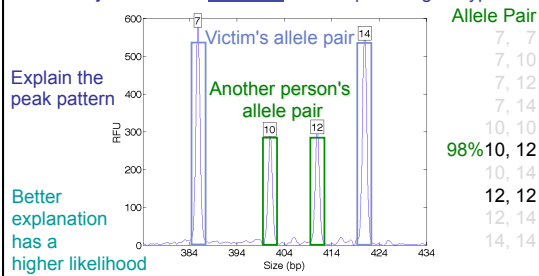
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## Genotype

*Thorough:* consider every possible genotype solution  
*Objective:* does not know the comparison genotype




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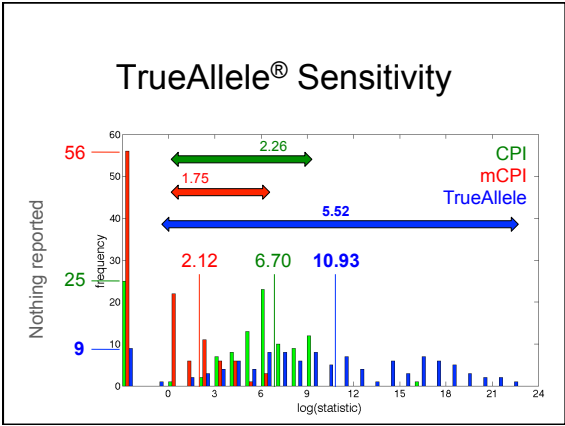
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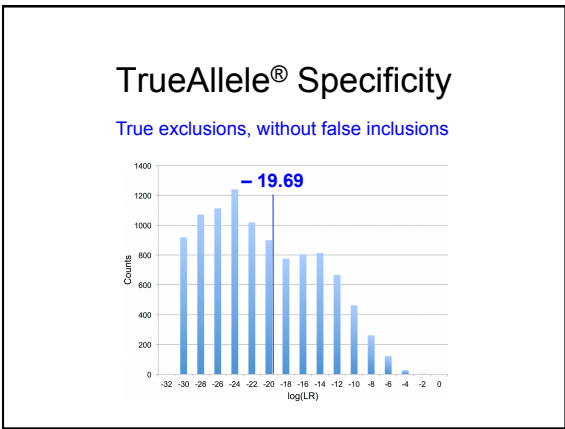
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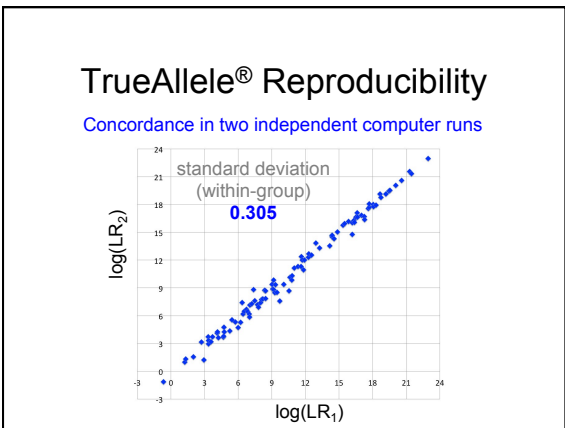
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## TrueAllele® Virginia Outcomes

144 cases analyzed  
72 case reports  
9 trials

City	Court	Charge	Sentence
Richmond	Federal	Weapon	50 years
Alexandria	Federal	Bank robbery	90 years
Quantico	Military	Rape	3 years
Chesapeake	State	Robbery	26 years
Arlington	State	Molestation	22 years
Richmond	State	Homicide	35 years
Fairfax	State	Abduction	33 years
Norfolk	State	Homicide	8 years
Charlottesville	State	Homicide	15 years

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## Conclusions

TrueAllele® Casework DNA mixture interpretation is:

- A reliable method
- sensitive
  - specific
  - reproducible

TrueAllele computer genotyping is  
more effective than human review

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## More information

<http://www.cybgen.com/information>

- Courses
- Newsletters
- Newsroom
- Presentations
- Publications



Cybergenetics

[perlin@cybgen.com](mailto:perlin@cybgen.com)

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