

Forensic Stasis in a World of Flux

Quattrone Center Spring Symposium
Technology in Criminal Justice Reform
May, 2016
Philadelphia, PA

Mark W Perlin, PhD, MD, PhD
Cybergenetics, Pittsburgh, PA



Cybergenetics

Cybergenetics © 2003-2016

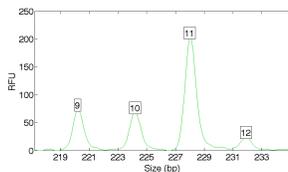
Pinkins confined

1989 – 5 men raped an Indiana woman
Darryl Pinkins and 2 others misidentified
1991 – wrongfully convicted, 65 year sentence

2001 – DNA mixture evidence
2 contributors found, not the accused
but 5 were needed, post-conviction relief denied

Complex data

- DNA mixtures
- small amounts
- degraded DNA



Simple solution

(1)
Simplify data



(2)
Peek at answer



(3)
Calculate statistic



- Put people in the process
- To overcome software failure
- And introduce human bias

Information failure

MIX05 (2) – inconclusive, 4-14 zeros

MIX13 (3) – 70 of 100 labs falsely include

CPI statistic – random number, shutters labs

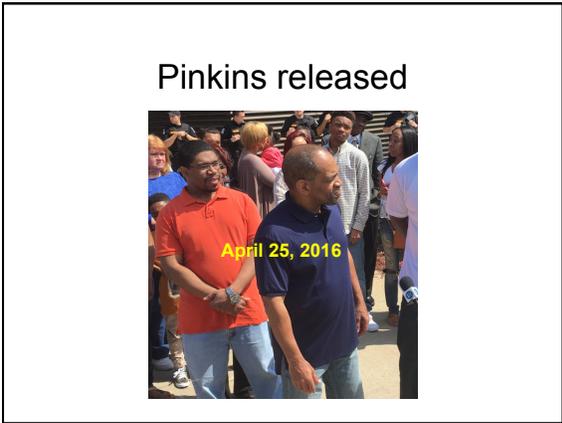
- **inclusion**, subjective with wrong statistic
- **exclusion**, subjective with no statistic
- **inconclusive**, discard probative evidence

Forces of stasis

- human need for certainty
- fear of cross examination
- self-regulating hall of mirrors
- government forensic monopoly
- software limitations reduce work
- some lawyers fight against truth
- state liability for DNA abuse

TrueAllele resolution

Capability	Human-centered	Computer-driven
Data	Choose	Must use all
Uncertainty	Threshold	Probability
Neutral	Include only	Include/Exclude
Statistic	Random number	Probative value
Transparent	Black box	Math disclosed
Testable	Inner mind	Available software
Objective	No	Not given answer
Validated	No	31 (7) studies
Accurate	No	Empirically proven
Automated	No	Unlimited capacity
Frye/Daubert	No	7 states
Item-to-item	No	Connect scenes



TrueAllele exoneration

1. compared *evidence with evidence*
2. calculated *exclusionary match statistics*
3. revealed 5% *minor mixture contributor*
4. *jointly analyzed* DNA mixture data
5. showed three perpetrators were *brothers*

found 5 unidentified genotypes,
defendants not linked to the crime

Forces of flux

- respecting DNA evidence
- accurate computer modeling
- eliminating human bias
- accepting variation in nature
- empirical software testing
- some lawyers fight for truth
- state liability for DNA abuse

DNA injustice

Fruits of bad forensic science

- False convictions
innocent imprisoned
- False acquittals
guilty go free
- Unnecessary victimization
people harmed

Catalyzing justice

"inconclusive" often means
failed evidence interpretation

State fails to disclose
potentially exculpatory DNA

Falsely convicted, civil rights violation
Tried & acquitted, malicious prosecution
Unnecessarily victimized, state liability

TrueAllele can reopen the past by
automatically re-examining DNA data

More TrueAllele information

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



- Courses
- Newsletters
- Newsroom
- Presentations
- Publications
- Webinars

<http://www.youtube.com/user/TrueAllele>
TrueAllele YouTube channel



Cybergenetics



perlin@cybgen.com
