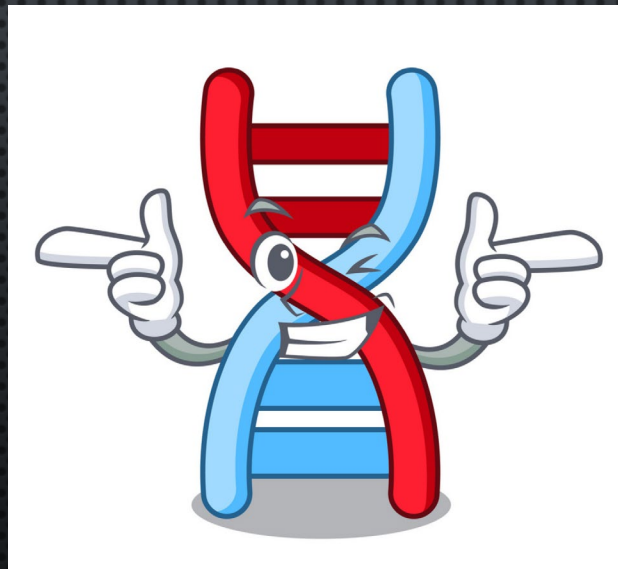


DEFENDING AGAINST THE NEW DNA “EVIDENCE”



SO MANY ISSUES ALONG THE PIPELINE...

1. DEPOSIT OF DNA AT SOURCE
 - TYPE, QUALITY, QUANTITY, CONTRIBUTIONS
2. COLLECTION AND PRESERVATION
3. LABORATORY CONDITIONS
 - CONTAMINATION
 - PROGRAMS UTILIZED
 - CERTIFICATION
4. ERRORS DURING EXTRACTION AND REPLICATION
5. ANALYSIS OF EPG BY INDIVIDUAL ANALYST
 - "NOISE"
 - OVERSATURATION
 - NUMBER OF CONTRIBUTORS

...MORE ISSUES ALONG THE PIPELINE

6. SPECIFIC PROBABILISTIC SOFTWARE PROGRAM

- ISSUES WITH PROGRAM
- SUBSEQUENT UPDATES

- EXTENT AND SPECIFICITY OF DEVELOPMENTAL VALIDATION
 - NUMBER OF CONTRIBUTORS, QUANTITIES, RELATIVE CONTRIBUTION
 - SOFTWARE VALIDATION CONCERNS
 - INDEPENDENCE

• EXTENT AND SPECIFICITY OF LABORATORY VALIDATION

- NUMBER OF CONTRIBUTORS, QUANTITIES, RELATIVE CONTRIBUTION

• APPLICATION OF PROGRAM

- SELECTION OF INPUT PARAMETERS
- SELECTION OF REFERENCE DATABASES
- SELECTION OF INPUT DATA

7. HOW RESULTS ARE CONVEYED QUALITATIVELY

IMPORTANT SUBSTANTIVE MATERIALS TO REVIEW

- PCAST REPORT (SEPTEMBER 2016) AND ADDENDUM (JANUARY 2017)
- NIST INTERLABORATORY STUDIES INVOLVING DNA MIXTURES, FOR. SCI. INT. GENET. 37 (APRIL 2018)
- BARRIO, ET AL: GHEP-ISFG COLLABORATIVE EXERCISE ON MIXTURE PROFILES, FOR. SCI. INT. GENET. (JULY 2018)
- ALLADIO, ET AL: DNA MIXTURES INTERPRETATION, FOR. SCI. INT. GENET. 37 (AUGUST 2018)
- NOEL, ET AL: STRMIX PUT TO THE TEST, FOR. SCI. INT. GENET. 41 (JULY 2019)
- LIKELIHOOD RATIOS AS WEIGHT OF FORENSIC EVIDENCE, J. RSCH OF NAT'L. INST. STDS. & TECH. (2017)
- STIFFELMAN, NO LONGER THE GOLD STANDARD, BERKELEY J. CRIM. LAW., VOL. 24:1 (2019)

SOME CASES TO REVIEW, CITE, DISTINGUISH:

- LOW-TEMPLATE, 3+ CONTRIBUTORS: US V GISSANTANER (WD MICH) (PENDING CA 6)
US V MCCLUSKEY (D NM)
- SIMPLE(R) MIXTURES: US V LEWIS (D MINN)
PEOPLE V MUHAMMAD (MICHIGAN SUPREME CT)
- INSUFFICIENT VALIDATION TESTING: STATE V HILLARY (NEW YORK)
US V GISSANTANER (WD MICH)
- DISCLOSING SOURCE CODE: STATE V DOMINGUEZ (SUPERIOR COURT OF CA)

EVIDENTIARY CONSIDERATIONS

- DAUBERT FACTORS
 - TESTING
 - PEER REVIEW AND PUBLICATION
 - ERROR RATE AND STANDARDS CONTROLLING OPERATION
 - GENERAL ACCEPTANCE IN RELEVANT SCIENTIFIC COMMUNITY
- FRE 402: “GATE-KEEPING” AUTHORITY TO DETERMINE RELEVANCE AND RELIABILITY
- FRE 403: RELEVANCE AND PREJUDICIAL EFFECT

FITNESS FOR THE PURPOSE APPLIED