NATIONAL RESEARCH COUNCIL of the NATIONAL ACADEMIES

STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD

THE NATIONAL ACADEMY OF SCIENCE REPORT AND ITS IMPACT ON PROSECUTORS AND THE GBI

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EXECUTIVE SUMMARY OF REPORT

- A free executive summary is provided by the National Academies as part of their mission to educate the world on issues of science.
- For a copy go to: http://www.nap.edu/catalog/12589.htlm

Some forensic techniques named as suspect in National Academy of Sciences report…

In some cases, innocent people may have been imprisoned, even put to death."

Chicago Tribune, Feb. 19, 2009

The New York Times

Science Found Wanting in Nation's Crime Labs

Los Angeles Times

- Report questions science, reliability of crime lab evidence
- The National Academy of Sciences says many courtroom claims about fingerprints, bite marks and other evidence lack scientific verification. It finds forensics inconsistent and in disarray nationwide.

NDAA COMMENTS

NDAA firmly believes that the scientific validity of any forensic method or discipline should be tested and resolved by science. But NDAA is equally committed to the principle that the evidentiary reliability of scientific evidence must be resolved by courts.

In this respect NDAA believes that the legal validation of such evidence is best tested through courtroom proceedings utilizing the *Frye* and *Daubert* standards of admissibility.

Where such evidence meets the legal standard for admissibility it should not be withheld from juries. Rather it should aid them in their search for truth. In that regard, cross−examination by skilled and informed advocates, exposing weaknesses or strengths in scientific evidence, still represents the greatest test for ascertainment of the truth.

THE NATIONAL ACADEMIES

- Charted by Congress
- Mandate to advise the federal government on scientific and technical matters
- Composed of:
  - National Academy of Science
  - National Academy of Engineering
  - Institute of Medicine
  - National Research Council

COMMITTEE MEMBERS

- Judge, US Court of Appeals
- Professors of Science
- Law Professor
- Lab Director
- Criminal Defense Attorney
- Senior NIST fellow
- Medical Examiners

TESTIMONY & MATERIALS

- Forensic Science Practitioners
- Private/Public lab directors
- Medical Examiners/Coroners
- Scientists
- Scholars
- Government Officials
- Lawyers
- Law Enforcement

CONGRESS' INSTRUCTIONS TO COMMITTEE:

- Assess the present and future resource needs of the forensic science community;
- Make recommendations for programs that will increase the number of qualified forensic scientists and medical examiners;

CONT.

- Disseminate best practices and guidelines concerning the collection and analysis of forensic evidence to help ensure quality and consistency in the use of forensic technologies and techniques:

3 PURPOSES OF REPORT

1.

- Further improvements will assist law enforcement officials in the course of their investigations to identify perpetrators with higher reliability.

2.

Further improvements in forensic science practices should reduce the occurrence of wrongful convictions, which reduces the risk that true offenders continue

to commit crimes while innocent persons inappropriately serve time.

3.

- Any improvements in the forensic science disciplines will undoubtedly enhance the Nation's ability to address the needs of homeland security.

FORENSIC SCIENCES EXAMINED

- Pattern/Experience Evidence
  - Fingerprints
  - Tool marks
  - Handwriting
  - Impression (tire,footware)
  - Blood stain pattern
  - Firearm Examination
  - Hair
  - Bite marks

FORENSIC EVIDENCE cont.

- Analytical Evidence
  - DNA
  - Coatings (paint)
  - Chemicals (including drugs)
  - Materials (including fiber)
  - Fluids
  - Serology
  - Fire and explosive analysis

Judge Harry Edwards to the US Senate Judiciary Committee:

- "The forensic science community is plagued by fragmentation and inconsistent practices in federal, state, and local law enforcement jurisdictions and agencies."

REPORT FINDINGS

- Absence of solid scientific research to demonstrate validity and accuracy;
- Little research on human observer bias and sources of human error;
- Little interdisciplinary scientific research;

FINDINGS CONT.

- Absence of solid scientific and allied research for new technologies and innovations;
- Lack of autonomy for forensic labs;
- Absence of mandatory accreditation programs;

FINDINGS CONT.

- Failure to adhere to robust performance standards;
- Failure to use standard terminology in reports and testimony;
- Lack of effective oversight

CRITICISM OF LANGUAGE USED

- Statements that error rate in fingerprints is essentially zero.
- Committee's findings "scientifically implausible.
- "A 'zero error rate' is a myth in fingerprint analyses and in all other forensic disciplines."

OTHER QUIBBLES w/ FINGERPRINTS

- No research to establish limits and measures of performance
- Contact between analysts
- Contact between analysts and law enforcement

FINGERPRINT ATTACKS

- Subjective Interpretation
  - Brandon Mayfield arrest based on fingerprint
  - Maryland v. Rose

THE BRANDON MAYFIELD DEBACLE

- Oregon man (lawyer) wrongly accused of being involved in the 2004 terrorist train bombing in Madrid, Spain.
- Mayfield was a Muslim convert.
- The FBI Integrated Automated Fingerprint Identification System turned up 20 possible matches to a ***partial*** print on a plastic bag of detonator caps found nearby the explosion scene.

MAYFIELD DEBACLE CONT.

- 3 FBI agents were ***certain*** that Mayfield's prints, in the system from a teenage arrest, were a ***match***.
- Mayfield is arrested and spends 2 weeks in jail.
- Mayfield's court-ordered independent expert concurred with FBI.

MAYFIELD DEBACLE CONT.

- Spanish authorities chased down other leads and became skeptical of Mayfield's involvement and ultimately determined the print belonged to an Algerian.
- FBI eventually agreed. Mayfield awarded $2million in damages.

MAYFIELD AND THE REPORT

- The Mayfield mistakes were fodder for the report.
  - language used such as “match”
  - Sharing of results among examiners
  - Urgency to confirm a “match”
  - Bias

MAYFIELD REPORT

- See Office of Inspector General Special Report on Brandon Mayfield at:
- http://www.usdoj.gov/oig/special/s0601/PDF_list.htm

AN ODD LITTLE CASE OUT OF MARYLAND

- Maryland v. Rose (fingerprint issue)
- Maryland is a ***FRYE*** state and subject to the "general acceptance" standard.
- As does Georgia!

HOLDING

- "The State did not show by a preponderance of evidence that a fingerprint examiner can **reliably** identify a fingerprint to an individual to the exclusion of all others using the ACE-V method."
- Throughout the decision, the court uses the Daubert Standard.

ROSE CONT.

- Material about the Madrid/Mayfield debacle was available for the court to review. AND IT DID!
- Much of the Court's opinion is based on FBI's misidentification of Mayfield's fingerprint.

ROSE CONT.

- However, the State's sole witness did not testify to any minimum threshold and on the contrary stated that positive identification could be effected using any amount of corresponding ridge detail.
- 0% error rate.

REPORT RECOMMENDATIONS

- Congress should establish and appropriate funds for THE NATIONAL INSTITUTE OF FORENSIC SCIENCES

STANDARDIZED TERMINOLOGY

- Lab Reports
- Testimony
- Model Reports

RESEARCH

- Peer reviewed
- Validity of methods
- Quantifiable measures
- Automated techniques

LAB INDEPENDENCE/AUTONOMY

- Crime Lab
- Law Enforcement

OTHERS:

- Research Observer Bias
- Interdisciplinary Research to NIFS
  - private labs
  - government labs
  - scientific working groups
  - universities
  - NIST

MORE:

- Individual Certification
- Lab Accreditation
- Quality Assurance
- Law Schools
- Ethics

MEDICOLEGAL DEATH INVESTIGATION SYSTEM

- Eliminate Coroners
- Research and training
- Develop Standards and best practices
- Accreditation
- Funding only to accredited offices
- Autopsies

Melendez-Diaz v. Massachusetts
No. 07-591
Decided June 25, 2009

- Scalia Opinion (Stevens, Souter, Thomas, Ginsburg join)
- Drug case and crime lab test
- CRAWFORD mandates crime lab analysts to testify in person. Report alone violates the 6th Amendment.

SCALIA REFERENCES REPORT SEVERAL TIMES IN OPINION

- "Nor is it evident that what respondent calls "neutral scientific testing' is as neutral or as reliable as respondent suggests. Forensic science is not uniquely immune from the risk of manipulation. According to a recent study conducted under the auspices of the National Academy of Sciences, 'the majority of laboratories producing forensic evidence are administered by law enforcement agencies…"

SCALIA :

- "Confrontation is designed to weed out not only the fraudulent analyst, but the incompetent one as well. Serious deficiencies have been found in the forensic evidence used in criminal trials."

SCALIA:

- …"And the National Academy Report concluded: The forensic science system, encompassing both research and practice, has serious problems that can only be addressed by a national commitment to overhaul the current structure that supports the forensic science community in this country."

President-Elect Barack Obama, December 20, 2008

- "The scientific process is about evidence and facts that are never twisted or obscured by politics or ideology."