

Strengthening Forensic Science in the United States A Summary Report



Technical Bulletin 40-034

Setting the Standard for Quality DNA Identification

The National Academy of Sciences released a Pre-Publication Report last month (March 2009) entitled **Strengthening Forensic Science in the United States: A Path Forward**. This report was created and released by a committee of Forensic and Law Enforcement professionals, which first met in the fall of 2006. This committee received its charter based upon a Congressional action November 22, 2005, when the Science, State, Justice, Commerce, and Related Agencies Appropriations Act of 2006 became law. Under the terms of the statute, Congress authorized "the National Academy of Sciences to conduct a study on forensic science, as described in the Senate report."

Evaluating the current state of the Science of Forensic Testing seems a natural progression, as both the caseload and techniques employed in the forensic sciences has exploded with the capabilities offered by the ever improving area of DNA identification. With the number of exonerations reported by the Innocence Project at 238 and counting, it has been brought to light that many people in America have been wrongfully convicted and in some cases received the death penalty.

The report does spare the application of DNA testing from the miscarriages of justice that have been ascribed to eye witness identification, ballistics, fingerprints, shoe prints and so on. In fact, DNA testing has been used in several cases to right many of the wrongfully convicted. However, in addition to the numerous Innocence Project exonerations, the media has recently cast a spotlight on several mishandled cases such as:

- The Duke Lacrosse team incident where District Attorney Mr. LaFong misused what may have been analytically correct DNA findings.
- The arrest of Portland attorney Brandon Mayfield for the train bombings in Madrid based upon false fingerprint identifications.
- The closure of Houston and Detroit Crime laboratories.

The following excerpt from the Pre-Publication Report explains very well, the reasons and objectives of Congress.

Challenges Facing the Forensic Science Community

For decades, the forensic science disciplines have produced valuable evidence that has contributed to the successful prosecution and conviction of criminals as well as to the exoneration of innocent people. Over the last two decades, advances in some forensic science disciplines,



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especially the use of DNA technology, have demonstrated that some areas of forensic science have great additional potential to help law enforcement identify criminals. Many crimes that may have gone unsolved are now being solved because forensic science is helping to identify the perpetrators. Those advances, however, also have revealed that, in some cases, substantive information and testimony based on faulty forensic science analyses may have contributed to wrongful convictions of innocent people.

This fact has demonstrated the potential danger of giving undue weight to evidence and testimony derived from imperfect testing and analysis. Moreover, imprecise or exaggerated expert testimony has sometimes contributed to the admission of erroneous or misleading evidence.

Further advances in the forensic science disciplines will serve three important purposes.

First, further improvements will assist law enforcement officials in the course of their investigations to identify perpetrators with higher reliability. Second, 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. Third, any improvements in the forensic science disciplines will undoubtedly enhance the Nation's ability to address the needs of homeland security.

This two year study has involved hundreds of forensic, legal and academic scholars, and has reached preliminary conclusions. The following list contains the thirteen issues that need rapid correction to provide a fair, non-biased forensic laboratory system.

1. **Establish** a National Institute of Forensic Science (NIFS) to develop Best Practices and Standards.
 - *It must have a culture that is strongly rooted in science, with strong ties to the national research and teaching communities, including federal laboratories.*
 - *It must have strong ties to state and local forensic entities as well as to the professional organizations within the forensic science community.*
 - *It must not be in any way committed to the existing system, but should be informed by its experiences.*
 - *It must not be part of a law enforcement agency.*
 - *It must have the funding, independence, and sufficient prominence to raise the profile of the forensic science disciplines and push effectively for improvements.*
 - *It must be led by persons who are skilled and experienced in developing and executing national strategies and plans for standard setting; managing accreditation and testing processes; and developing and implementing rulemaking, oversight, and sanctioning processes.*
2. **Establish** Standard Terminology for reporting and testifying, including a minimum standard of information and statistics.



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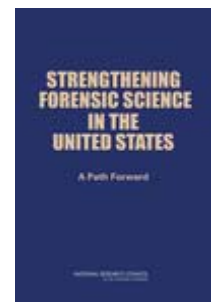
3. **Research** to determine accuracy, reliability and validity in forensic science disciplines. Develop quantifiable measures of uncertainty.
4. **Improve** the scientific bases of forensic science examinations to maximize independence from or autonomy within the law enforcement community. Remove all public forensic laboratories and facilities from the administrative control of law enforcement agencies or prosecutors offices.
5. **Encourage** Research programs on human observer bias and sources of human error.
6. **NIFS should work** with the National Institute of Standards and Technology (NIST) in conjunction with government, private laboratories, universities and scientific working groups (SWG's) to improve methods and practices.
7. **Laboratory accreditation** and individual certification of forensic science professionals should be mandatory.
8. **Forensic laboratories** should establish routine quality assurance and quality control to ensure accuracy of forensic analysis and practitioners. Quality control procedures should be designed to identify mistakes, fraud and bias.
9. **NIFS should establish** a code of ethics for all forensic science disciplines. NIFS should explore mechanisms of enforcement of ethical violations.
10. **Encourage life science students** to pursue graduate studies in forensic sciences. NIFS should support law school administrators in establishing legal education programs for law students, practitioners and judges.
11. **Improve medicolegal death investigators** status, appropriating funds needed to build regional medical examiner offices, secure necessary equipment, improve administration, and ensure the education, training, and staffing of medical examiner offices and help current medical examiner systems modernize their facilities.
12. **Congress should authorize** funds to launch a new broad based effort to achieve nationwide fingerprint data interoperability.
13. **Congress should fund** NIFS, CDC and the FBI for forensic scientists and crime scene investigators in managing and analyzing evidence from Homeland Security events.

Strengthening Forensic Science in the United States: A Path Forward

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