# Department of Justice

STATEMENT OF

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BEFORE THE

UNITED STATES HOUSE OF REPRESENTATIVES
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SUBCOMMITTEE ON CRIME, TERRORISM, AND HOMELAND SECURITY

CONCERNING

"STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES:
A PATH FORWARD"

PRESENTED

MAY 13, 2009

The Department of Justice (DOJ) welcomes the report of the National Research Council entitled, *Strengthening Forensic Science in the United States: A Path Forward.* The report is a helpful addition to the public discourse on the state of the forensic science community, and it recommends many useful steps to strengthen the community and enable it to continue to contribute to an effective criminal justice system. In fact, many of these steps are familiar to those in the forensic science community, including DOJ, and have been discussed among practitioners for some time. In large part, it builds on previous reviews conducted under DOJ's auspices in 1999 and 2004 that similarly identified numerous areas for improvement.

We must also be cognizant, however, of what the report does not do. The report does not, and was never intended to, comprehensively assess the forensic sciences themselves. That was not the mandate of the committee that drafted the report. Likewise, the report does not undermine the use of forensic science generally – or any specific discipline – in the courtroom. As one of the co-chairs of the report committee put it, "The question of whether forensic evidence in a particular case is admissible under applicable law is not coterminous with the question whether there are studies confirming the scientific validity and reliability of a forensic science discipline." Further, the report does not, and was never intended to, offer any judgments on any cases currently in the judicial system. Finally, the report does not recommend any rule or law changes in the area of evidentiary admissibility. That, too, was outside the mandate of the committee.

In sum, DOJ views the report as a positive contribution to a critical debate, but it should be considered in the appropriate context. The report's publication is thus an opportunity for policy-makers to re-focus their attention on this critical issue. We look forward to working with partners in the forensic science community to act on its recommendations and on other ways to improve the use of the forensic sciences.

## Background

On February 18, 2009, the National Research Council of the National Academies published *Strengthening Forensic Science in the United States: A Path Forward.* The report was commissioned by Congress in 2005 at the instigation of the forensic science community itself. It is a consensus document written by a committee co-chaired by Judge Harry T. Edwards of the U.S. Court of Appeals for the D.C. Circuit and Dr. Constantine Gatsonis, a professor of biostatistics at Brown University. The committee heard testimony from a cross-section of persons involved in forensic science disciplines, including representatives of the Federal Bureau of Investigation (FBI) and United States Secret Service labs, the National Institute of Justice (NIJ), forensic science professional organizations, academics critical of the forensic sciences, and advocacy groups, such as the Innocence Project.

The report concludes that forensic science, as a whole, produces valuable evidence contributing to the successful prosecution and conviction of criminals, as well as to the exoneration of the innocent. However, the report also identifies what the committee considers to be systemic weaknesses in the use of forensic evidence that can and have led to wrongful

convictions. The report contains 13 recommendations designed, in the committee's opinion, to remove or ameliorate these systemic weaknesses.

The Value of Forensic Science

The report rightly acknowledges the important contributions that forensic science has made to the criminal justice system, both in convicting the guilty and exonerating the innocent. As Judge Harry Edwards stated, "The work of the forensic science community is critically important in our system of criminal justice."

Forensic science is crucial to the criminal justice system from start to finish. During an investigation, forensic science evidence is a vital exculpatory tool, often excluding potential suspects and narrowing the focus of investigations for the police. Forensic evidence may provide important clues to places, objects or people that can lead police to an arrest before another crime has been committed by a particular individual, thus harnessing the power of crime prevention. In a post-mortem context, forensic examinations are imperative for suspicious deaths and are vital to determining a cause of death. Competent and complete autopsies also greatly facilitate establishing the manner of death, as well as other vital information for a death investigator.

After an arrest, forensic evidence often expedites dispositions of cases and, frequently, when confronted with the results of forensic analyses, defendants choose to accept a plea rather than assume the risk of going to trial. At trial, forensic evidence and the expert testimony proffered by forensic scientists can be key to securing a conviction or appropriate sentence. Forensic evidence can associate the victim to a defendant or a defendant to a victim or crime scene, and in some instances, may implicate the defendant to the exclusion of all others. In every instance, our adversarial system provides the defense the opportunity to challenge the probative value of forensic evidence, either through cross-examination or though independent testing and testimony from a defense expert.

Improving the Forensic Science Community

For some time, it has been clear that the forensic science community is in need of change. Indeed, twice in the last 10 years, even prior to the report, DOJ, working with partners from the forensic science community, recognized this. A 1999 report published by NIJ entitled *Forensic Sciences: Review of Status and Needs*, identified lapses in training, standardization, validation, and funding. In 2004, responding to a Congressional directive, NIJ published *Status and Needs of Forensic Science Service Providers: A Report to Congress*, a survey of forensic science organizations that emphasized the need for more basic research; manpower and equipment resources; education; professionalism through accreditation and certification; quality assurance; and enhanced coordination among Federal, State, and local stakeholders. The National Academies report raises these same issues and makes many recommendations that, while not necessarily new to the forensic science community, will help garner attention and lead to action.

In that vein, DOJ supports virtually all of the recommendations. Many of them are directed toward state and local forensic entities, which is to be expected as around 98 percent of forensic science is performed outside the federal government. But the Federal government has a crucial leadership role to play in support of our criminal justice stakeholders and constituents. Indeed, the federal government is already engaged in activities along the lines of many of the recommendations, but recognize that a significant new effort is required to appropriately address the issues raised by the community and in the report.

Specifically, DOJ supports: standardizing terminology across the forensic science community (Rec. #2); more research on the accuracy, reliability, and validity of the forensic sciences (Rec. #3); more research on human observer bias and sources of human error in the forensic sciences (Rec. #5); the development of standards, practices, and protocols for use in forensic sciences (Rec. #6); lab accreditation and practitioner certification (Rec. #7); stronger quality assurance and control procedures (Rec. #8); establishment of a code of conduct, including ethical principles (Rec. #9); support for higher education in the forensic sciences (Rec. #10); the improvement of the medicolegal death investigation system (Rec. #11); AFIS interoperability (Rec. #12); and, the use of forensic science to aid homeland security (Rec. #13).

We are already working to address many of the recommendations, and we have concrete ideas about how to do more:

- The National Institute of Justice is collaborating with the National Institute on Standards and Technology (NIST) on an Expert Working Group on Human Factors in Latent Print Analysis, the first of several working groups which are envisioned to address validation and practice to limit contextual and other biases in qualitative forensic disciplines.

- Standards created by the nine FBI-sponsored Scientific Working Groups (SWGs), composed of experts in nine forensic disciplines from local, state, and federal agencies across the world, should be adopted nation-wide to set forth a uniform guideline for methods, processes, procedures, practices, standard specifications, and test methods. Established standards should be consistently applied across the full spectrum of the work, including ancillary methods encompassing the acceptance, processing, and reporting of results.

- Forensic practitioners should also adopt the use of standardized or model laboratory reports which contain uniformly standardized definitions to delineate the precise meaning of the words or phrases used to summarize the results of their analyses. Similarly, the criteria used to measure performance and business processes requires standardization so that a clear picture of backlogs, case flow, and other management parameters can be obtained that is consistent across the nation.

- Today, 97 percent of public forensic science laboratories are accredited by the two accrediting bodies, ASCLD-LAB (on whose board I serve) and the Forensic Quality Services - International (FQS-I). In addition, the International Organization for Standardization (ISO) has develop its standard 17025 (ISO 17025) for forensic labs,

based on the standard for calibration and testing laboratories. ISO 17025 should become the cornerstone of a new, comprehensive accreditation program.

- The number of private forensic science laboratories is unclear (although more than 40 private laboratories are accredited between the two accreditation programs) but accreditation of all private forensic science service providers is paramount.

- Equally important is the accreditation of operational units external to the crime laboratory, such as latent print and firearms units housed within police departments. While these are not traditional "laboratory environments" and may not be amenable to accreditation, standards should be developed to ensure that a process is in place which provides the mechanism to demonstrates their compliance.

- NIJ facilitates the accreditation process by requiring that any eligible applicant seeking funds under its DNA grant programs must be accredited or be in the process of obtaining accreditation. NIJ also enforces good laboratory practice through its Grant Progress Assessment program which includes on-site visits to hundreds of crime laboratories each year, (including the private sector), and enforces conditional eligibility requirements which encompass allegations of misconduct, among many others.

- Certification of individual forensic practitioners should be part of the effort to improve the forensic science community. To demonstrate that forensic practitioners comply with professional standards, a comprehensive certification effort should be pursued, ensuring that an individual possesses the knowledge, skills, and abilities to competently perform analyses in their individual discipline or sub-discipline. A blended approach for demonstrating competencies could include, but not be limited to, proficiency tests and compliance with continuing education requirements, and adherence to a code of ethics.

- Certification should be recurring and, perhaps, could be stipulated as a requirement before their work or expert opinion can be proffered in a court of law for either the prosecution or defense.

A number of these ideas will require legislation to implement, especially in the area of enforcement, and DOJ is eager to work with Congress in finding ways to accomplish this.

Other Recommendations

There are two recommendations that need further study: the creation of a National Institute of Forensic Sciences (NIFS) to oversee the nation's entire forensic science community and the removal of all forensic science labs from administrative control of law enforcement agencies or prosecutors' offices. The report is correct in observing that, currently, the nation's forensic science community is somewhat fragmented given the sheer number of independent law enforcement, prosecutorial units, and crime laboratories. However, there is important work going on within the community helping to unify it, as national organizations such as ASCLD/LAB and the SWGs are working to standardize quality control and strive to implement

uniform standards. It is not clear that a new organization is necessary to achieve implementation of most of the report's recommendations. In fact, it could detract from this effort by refocusing energies and resources toward bureaucracy-building rather than substantive improvement in the field. A decision to establish a NIFS must be done carefully, and only after a thorough assessment of the strengths and weaknesses of both the concept and its proposed implementation.

Along those lines, DOJ also questions whether full independence of laboratories from law enforcement is advisable or feasible. The report cites an inherent potential for conflict of interest in the operational function of the majority of forensic service providers as they currently exist. The concept of "independence" that the report raises in recommendation #4 is not new to the law enforcement or forensic science community. In fact, states such as Arizona and Virginia have moved in this direction. However, it should not be surmised that this model can or should be adopted nation-wide because there is inherent value to a collaborative process among forensic practitioners and law enforcement in determining the best course of action as it relates to the analysis of forensic evidence. To be separated completely from interaction with investigative partners would likely cause missteps in decision-making that could result in either loss and/or destruction of evidence, or important analyses left undone. Instead, we agree with language in the report stating that autonomy within law enforcement entities should be the goal. And, in fact, accredited laboratories have management requirements to ensure independence of their scientific work. And while removing the administration of the SWGs from operational crime labs could establish an increased measure of independence, it is not clear that much more would be necessary.

In addition to the recommendations in the report, we note that the previous reports cited above called for action in other areas – especially personnel, equipment, technology transfer, and greater coordination across layers of government. A comprehensive strategy to improve the forensic science community should include measures along those lines.

The Reliability of the Forensic Disciplines

Along with understanding what the report does, it is important to note that the report does not take the position that any of the forensic disciplines is scientifically invalid. It is crucial to emphasize this point given the way the report has been presented in the media and has been taken by the public and the defense bar as labeling forensics not "real" science. Rather, in the chapter cataloguing some of the disciplines, the report highlights the lack of research and other scientific validation methods within several disciplines. In fact, many disciplines have received a greater level of scientific scrutiny and validation than was recognized in the report. For example, NIST, through funding from NIJ and in collaboration with the FBI, has validated a large number of digital forensics tools over a period of many years. However, limited validation does not mean that those disciplines are invalid; it means simply that more research needs to be done. And, critically, we believe it is incorrect to compare the non-DNA forensic sciences to DNA. DNA is unique, since it is amenable, for example, to large-scale statistical studies of various populations. Non-DNA forensic disciplines might not lend themselves to individualization, for example, but that does not mean that the science behind these methods is faulty, or that the probative value of the evidence is not relevant to prove guilt or innocence.

For these reasons, DOJ has confidence in the validity and reliability of the forensic sciences when correctly applied in the laboratory and when appropriately represented in the court room. It is true that the extent of scientific work performed among the forensic disciplines varies, with some having undergone more rigorous validation studies than others. At the same time, each of the disciplines has sub-disciplines that among themselves vary as to the degree of their foundational scientific research. In addition, there are levels of "validity" not easily captured by that one term, such as the basic science behind a forensic analysis or methodology, standardized protocols for analysis, and demonstrated error rates. At one end of this range would be DNA, at another end, perhaps, voice-stress analysis, and the rest are somewhere in the middle. In fact, one might think not of one range, but of a series of parallel lines of ranges for each discipline and sub-discipline regarding each form of validation. The report acknowledges these complexities in some respects, but in a number of places overstates the case against one or another discipline and slights the amount of work that has been done to establish their scientific bone fides.

Indeed, the report does not, and was not intended to be, a full-scale review of the state of each discipline. Rather, the report summarizes a portion of the current knowledge about the disciplines, but does not recount in detail the full scope of the science that has been done on each. If the report had included a more comprehensive review of the literature, it could have cited a wealth of published, peer-reviewed research that demonstrates the rigor of particular scientific methods when applied in a forensic context. (The FBI Lab is in the process of publishing such a review for each of the disciplines.) After all, it would be difficult to do so in the case of, for example, fingerprint analysis, a discipline that has a more than 100-year history of use in law enforcement but is addressed in only six and half pages in the report. There is a vast amount of research that validates the use of latent fingerprints that was not cited by the report. For example, NIJ has supported development of the *Friction Ridge Sourcebook* through the West Virginia University Forensic Science Initiative which will serve as a single authority on the history, terminology, morphology, examination procedures, and admissibility of fingerprints, among other pertinent matters relevant to latent print examiners.

That is not to say that enough has been done already. Rather, more research is certainly needed in order to further validate the forensic disciplines. More research is consistent with the scientific method, for part of that process is continual questioning and re-assessment of the hypothesis in the particular question posed. The traditional forensic sciences have developed over decades, and sometimes centuries. The forensic science community has been burdened with severe backlogs and lack of resources and funding leaving little time to conduct needed research and validation studies. In fact, this is another area where the traditional forensic sciences differ from DNA. DNA profiling was introduced into the criminal justice system after it had been extensively studied in the medical community and through the Human Genome Project. The challenge was to take the process out of the clinical and research laboratories and transform its application to serve a different purpose. Because DNA profiling is based in biology and chemistry and is well understood by the broader scientific community, the underlying validity and reliability in a forensic context could be rigorously demonstrated. The challenge was to ensure the efficacy of the technique in a forensic laboratory setting. That situation was not true with the classic or traditional forensic sciences. Thus, it is inappropriate to compare the DNA gold standard with the other disciplines, many of which are not analytically based, like

DNA and drug examinations, but more experiential and judgment based, like other forms of evidence introduced in court.

Further, we respectfully disagree with the report's assertion that the adversarial system is not capable of evaluating scientific evidence. The Supreme Court has made a point of noting its confidence in the capacity of federal trial judges to undertake the review of the validity of the science and the proper application of the particular method to the case at hand. See, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 593 (1993). Courts have held in-depth "Daubert hearings" and have written extensive and very detailed decisions on the admissibility of forensic science evidence. That is not to say, however, that improving forensic science will not help improve the courts' analyses of the validity and reliability as a condition of admissibility. The more well-established the validity and reliability of a discipline becomes through robust research, the easier it is for the courts to determine its admissibility. Moreover, the criminal justice system will also be improved by supporting continuing forensic science education programs for judges and lawyers. While there is room to do better in all parts of the adversarial system, courts have handled and do handle extremely complex issues, both legally and factually, and are fully capable of examining forensic science issues in the context of individual cases.

Conclusion

The publication of *Strengthening Forensic Science in the United States: A Path Forward* provides a renewed opportunity for the forensic science community, the Executive Branch, Congress, and the public to focus on ways to improve the use of forensic science. DOJ looks forward to working with Congress to develop and refine a comprehensive approach – including necessary Executive Branch action and legislation – to address the serious issues raised by the report.