

**UNITED STATES COURT OF APPEALS
DISTRICT OF COLUMBIA CIRCUIT
333 CONSTITUTION AVENUE, N.W.
WASHINGTON, DC 20001-2805**

HARRY T. EDWARDS
SENIOR CIRCUIT JUDGE

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April 6, 2009

The Honorable Patrick Leahy
Chairman
United States Senate
Committee on the Judiciary
Washington, DC 20510-6275

Dear Chairman Leahy:

I am in receipt of your letter of March 30, 2009, following up on my testimony before the United States Senate Committee on the Judiciary on March 18, 2009, regarding “The Need to Strengthen Forensic Science in the United States: The National Academy of Science’s Report on a Path Forward.” Your letter was accompanied by written questions from Ranking Member Arlen Specter and other committee members which you have asked me to answer in conjunction with my hearing testimony. The questions are listed below, along with my answers.

Question One: Judge Edwards, the NAS Report suggests at Recommendation Seven that “No person (public or private) should be allowed to practice in a forensic science discipline or testify as a forensic science professional without certification.” You have spent nearly three decades as an Article III judge—all of them on the court of appeals. In *Daubert v. Merrell Dow Pharmaceuticals*, 509 U.S. 579, 597 (1993), the Supreme Court held that trial judges should serve as gatekeepers to “ensur[e] that an expert’s testimony both rests on a reliable foundation and is relevant to the task at hand.” Are you comfortable with Congress shifting that gatekeeper function from the courts to the proposed National Institute of Forensic Science (NIFS) and its accreditation process?

ANSWER TO QUESTION ONE: The Committee did not intend to limit the gatekeeper role of trial judges. What the report says is that, in order to better serve the courts, the forensic science community should require certification and accreditation as self-imposed standards that would effectively prohibit examiners from testifying unless certified. In considering questions of admissibility, trial judges might then take into account the absence of certification and accreditation in applying Rule 702.

Question Two: Judge Edwards, how would you go about encouraging law enforcement to support Recommendation 1, that Congress establish and appropriate funds for an independent federal entity, the National Institute of Forensic Science (NIFS) that “must not be part of a law enforcement agency”? Would you expect law enforcement—including prosecutors and police officers—to push back significantly

and, if so, what would be your chief argument to support Recommendation 1 and its suggestion of absolute detachment?

ANSWER TO QUESTION TWO: Law enforcement officials have everything to gain if crime labs are improved. The recommendation calling for the removal of all public forensic laboratories and facilities from the administrative control of law enforcement agencies or prosecutors' offices is seen by some as controversial, because it raises political issues over the control of crime labs and their funding. The argument is made that it is easier for law enforcement units to secure appropriations to support the work of crime labs than it would be for labs to do it on their own. Thus, it is claimed that labs must stay under the control of law enforcement in order to be properly funded. In my view, this is a specious argument. Law enforcement units would be less effective if they did not have the support of crime labs. Therefore, directors of law enforcement units will be hard pressed to reasonably oppose adequate funding for crime labs. This issue is not about funding; it is about control.

There are a number of laboratories in the United States that are not subject to the administrative control of law enforcement agencies or prosecutors' offices, so this is not a novel idea. Some examples are: Alabama Department of Forensic Science; New York City Office of Chief Medical Examiner; Crime Laboratory of the Harris County (Texas) Medical Examiner's Office; Allegheny County (Pennsylvania) Medical Examiner's Office; Office of the Suffolk County (New York) Medical Examiner; Southwest Institute of Forensic Sciences (Dallas County, Texas); and Rhode Island State Crime Laboratory at the University of Rhode Island.

As the report makes clear, the simple point here is that forensic scientists should function independently of law enforcement administrators in the performance of their scientific work. The best science is conducted in a scientific setting as opposed to a law enforcement setting. Because forensic scientists often are driven in their work by a need to answer a particular question related to the issues of a particular case, they sometimes face pressure to sacrifice appropriate methodology for the sake of expediency or for other nonscientific reasons. This is not as it ought to be. Such pressures inhibit good science and ultimately adversely affect the credibility of the field.

Question Three: *Judge Edwards, the NAS Report disclaims an intent to undermine any particular criminal case in which someone was convicted, in whole or in part, based upon forensic science. For instance, in Chapter 3, the Report notes, "No judgment is made about past convictions and no view is expressed as to whether courts should reassess cases that already have been tried." NAS Report at 3-1. Nonetheless, the Report does note, "Some non-DNA forensic tests do not meet the fundamental requirements of science, in terms of reproducibility, validity and falsifiability" Report at 1-6. The Report goes on to discuss judicial dispositions of questions related to the admissibility of DNA evidence, drug identification, fingerprint analysis, and other forensic disciplines while citing dozens of cases. See Report at 3-11 through 3-20. Do you worry that criminal defendants will cite the Report to obtain post-conviction relief?*

ANSWER TO QUESTION THREE: The committee's report does not mean to offer any judgments on any cases in the judicial system. The report does not assess past criminal convictions, nor does it speculate about pending or future cases. And the report offers no proposals for law reform. That was beyond our charge. It will be no surprise if the report is cited for its findings about the current status of the scientific foundation of particular areas of forensic science. And it is certainly possible that the courts will take the findings of the committee regarding the scientific foundation of particular types of forensic science evidence into account when considering the admissibility of such evidence in a particular case. However, each case in the criminal justice system must be decided on the record before the court pursuant to the applicable law, controlling precedent, and governing rules of evidence. The question 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. The report focuses on the latter point, not the former.

Question Four: *If there is a separation between the laboratories and law enforcement (police and prosecutors), are you concerned that the laboratories will be less responsive to urgent requests from law enforcement or to shifts in crime trends that might otherwise suggest that resources should be focused upon particular types of crimes or crime problems? In short, would you be concerned if the Director of the FBI or a State Attorney General could not tell the crime lab to prioritize certain cases?*

ANSWER TO QUESTION FOUR: The report does not mean to suggest that the Director of the FBI or a State Attorney General could not act to prioritize the cases that they send to crime labs, only that the *scientific work* should be under the sole control of the scientists, not law enforcement officers. Nor does the report mean to suggest that law enforcement officers and prosecutors cannot communicate with crime lab officials regarding pending cases. What the report recommends is that forensic practitioners working in crime laboratories should operate autonomously in performing their scientific analyses and in writing reports that state their findings.

Question Five: *While we do have several national crime labs at the FBI, Secret Service and DEA, it is also true that suburban and rural police forces have much more limited resources and rely heavily upon their own officers to conduct tests. If we are imposing new certification, accreditation and educational standards on all persons designated to testify about forensics, are we creating an unfunded mandate for smaller departments that can ill afford to reassign officers for the particularized training necessary?*

ANSWER TO QUESTION FIVE: Because of the importance of forensic evidence in criminal prosecutions, it is *essential* that forensic practitioners follow best practices, pass proficiency tests, and be certified in their work. It is also essential that crime labs be accredited. We need rigorous certification and accreditation standards to avoid situations of the sort uncovered in the Houston, Detroit, and Baltimore labs. We cannot afford the risks that come with unqualified forensic examiners, any more than we can afford to allow persons without medical degrees to conduct autopsies. We must find incentive funds to support state and local jurisdictions to allow them to improve their forensic practices where they are wanting.

Question Six: *The notion that fingerprints are a reliable form of unique identification is ingrained in our society. We use fingerprints for background checks, some states' driver's licenses, computer logins, bank check deposits, etc. How do we reconcile these sometimes long accepted uses of fingerprints with the findings in the NAS Report that question the scientific underpinnings of fingerprint identifications?*

ANSWER TO QUESTION SIX: As you suggest, it is not easy to reconcile the sometimes long accepted uses of fingerprints with the findings in the NAS Report that raise concerns about the scientific underpinnings and accuracy of fingerprint identifications. However, the report does not say that fingerprint analyses have no uses – rather, it raises important questions about the absence of research to support the validity and reliability, *i.e.*, the accuracy of fingerprint analyses, especially in cases in which there are only partial or smudged prints. As the report indicates, the absence of research can have unfortunate consequences in cases in which an examiner is looking at something other than a clear, clean, full print.

The report does not mean to suggest that fingerprint analysis must stand on par with DNA. Nor does the report mean to say that DNA analyses are flawless. Rather, the report notes that DNA analysis has had a level of scientific study and development that should be done for other disciplines (such as fingerprint identifications) that are used to support individualization claims. In other words, each discipline/modality should be evaluated scientifically in order to assess its accuracy using current technical capabilities and to identify areas in which new research and development are needed.

In a recent speech at Arizona State University, at a conference on “Forensic Science for the 21st Century: The National Academy of Sciences Report and Beyond,” I offered the following thoughts on fingerprint analysis:

For years, the courts have been led to believe that disciplines such as fingerprinting can be safely relied upon to support claims of individualization. For example, in a decision issued by the Seventh Circuit, the court reported that an FBI fingerprint expert had “testified that the error rate for fingerprint comparison is essentially zero.” In a later decision issued by the Fourth Circuit, that court cited the Seventh Circuit opinion approvingly, noting that an expert from the FBI had testified that the error rate for fingerprint comparison was “essentially zero.”

The committee's report rejects as scientifically implausible any claims that fingerprint analyses have “zero error rates.” There is no such concept as a zero error rate in good scientific analysis. Yet, for years the courts were led to believe otherwise. Of even greater concern is the dearth of scientific research to establish limits of performance, to ascertain quantifiable measures of uncertainty, and to address the impact of the sources of variability and potential bias in fingerprint examinations and in other forensic disciplines that rely on subjective assessments of matching characteristics.

One of the most telling moments for me during the committee's hearings occurred when I heard the testimony of an expert fingerprint analyst who is a member of the Scientific Working Group on Friction Ridge Analysis, Study, and Technology. At one point in his testimony, he was asked what was the scientific basis for determining a match in prints in a situation when the examiner has only a partial or smudged print. The expert did not hesitate in conceding that the research has yet to be done.

When there is no good scientific basis to support a forensic discipline, and when experts cannot quantify certainty and uncertainty, the testimony that they offer is too often exaggerated (as with the claims of "zero error rates"); and sometimes testimony is even fabricated. You may have seen the recent story in the San Jose Mercury reporting that, for years, San Jose police never told anyone when fingerprint technicians could not agree about whether a suspect's prints matched those taken from the crime scene. Instead, the police department's Central Identification Unit generated a report indicating that two technicians agreed that the suspect's prints had been positively identified, while omitting that a third technician dissented. Stories like this are disheartening, to say the least.

There may be good science to support fingerprint analyses, but we need to do the necessary research to confirm this. I was told at the Arizona State conference that the National Institute of Justice has recently funded "foundational" studies to assess the accuracy of fingerprint identifications, and also that a task force recently has been established to consider the problem of contextual bias in forensic examinations. But I was also told that we have a long way to go before meaningful studies will be completed to determine the scientific basis for determining a match in prints in situations when an examiner has only a partial or smudged print.

Question Seven: *To the extent that one hopes the conceived NIFS would be establishing standards and best practices, how do you ensure that it can focus on that mission without becoming the default expert in every case?*

ANSWER TO QUESTION SEVEN: With the right people in charge of the NIFS operation – people of the caliber of John Holdren, the new director of the White House Office of Science and Technology Policy – and with adequate funding to promote important programs, a new entity like NIFS will effectively promote positive change in the forensic science community. Smart leaders know how to do their jobs well without thinking that they are the "default experts" in every case.

As the committee's report makes clear, what is needed is a massive overhaul of the forensic science system in the United States, both to improve the scientific research supporting the disciplines and to improve the practices of the forensic science community. And the creation of NIFS is the keystone for such an overhaul. I do not believe that truly meaningful reforms will be uniformly adopted by the forensic science community without the support and oversight of an entity like NIFS. The committee's report surely will promote some changes in current forensic practices, but more is needed.

The impetus for our committee's report came in 2005, when Congress – at the urging of the Consortium of Forensic Science Organizations (representing professionals in the forensic science community) – passed legislation directing the Academy to create an independent committee to study the forensic science community. In other words, Congress passed the legislation in response to a *call for help* from forensic professionals who understood the problems. In retrospect, I now realize that a principal part of the committee's assignment was to document what the professionals and a number of commentators already knew – namely, that the problems that afflict the forensic science community are serious and they cannot be cured without significant congressional action.

Question Eight: *Judge Edwards, the Second Recommendation in the Committee's report, "Strengthening Forensic Science in the United States: A Path Forward," involves establishing "standard terminology to be used in reporting on and testifying about the results of forensic science investigations." Among other things, the report calls for requiring the use of "model laboratory reports" as part of the accreditation and certification process. Do you worry that by dictating the form of laboratory reports, the proposed National Institute of Forensic Science will be viewed as micromanaging laboratories and experts?*

ANSWER TO QUESTION EIGHT: The report does not mean to dictate the "form" of laboratory reports, nor does it mean to suggest that the National Institute of Forensic Science should micromanage laboratories and experts. Rather, the report recommends the adoption of model laboratory reports with specifications regarding the *minimum information* that should be included in a lab report. This recommendation is intended to facilitate the ability of lawyers, judges, and jurors to better comprehend the limits of forensic evidence that is offered in a case. Obviously, this is crucially important, as is the recommendation that "standard terminology" should be used by experts in reporting on and testifying about the results of forensic science investigations.

Professor Jennifer Mnookin offers a very useful critique that highlights the problems of exaggerated expert testimony:

At present, fingerprint examiners typically testify in the language of absolute certainty. [They] make only . . . "positive" or "absolute" identifications – essentially making the claim that they have matched the latent print to the one and only person in the entire world whose fingertip could have produced it. In fact, if a fingerprint examiner testifies on her own initiative that a match is merely "likely" or "possible" or "credible," rather than certain, she could possibly be subject to disciplinary sanction! Given the general lack of validity testing for fingerprinting; the relative dearth of difficult proficiency tests; the lack of a statistically valid model of fingerprinting; and the lack of validated standards for declaring a match, such claims of absolute, certain confidence in identification are unjustified, the product of hubris more than established knowledge. [*Confessions of a Fingerprinting Moderate*, J.L. Mnookin. 2008. *The Validity of latent fingerprint identification: Confessions of a fingerprinting moderate. Law, Probability and Risk* 7(2):127].

This critique could be applied to several forensic disciplines that rely on subjective assessments of matching characteristics. When their testimony is admitted, forensic experts should offer as evidence nothing more than what they actually know, leaving it to the jury or judge to weigh the evidence offered against the other evidence that is presented in a case. My concern is that some forensic practitioners may not know what they do not know about the limits of their discipline; they will have to be taught this so that they can be circumspect in their testimony.

Question Nine: Judge Edwards, Recommendation Six suggests that NIFS should promote “studies to determine the effects of contextual bias in forensic practice” and appears to suggest blind tests with standard operating procedures “to minimize, to the greatest extent reasonably possible, potential bias and sources of human error in forensic practice.” The FBI’s errors in the Brandon Mayfield fingerprint identification case come to mind. How would you expect that case to have been handled differently if your recommendations had already been adopted?

ANSWER TO QUESTION NINE: Having strong science and validated, reliable, and enforceable procedures and regulations undoubtedly will help to prevent errors by forensic examiners. But it is risky to make a one-to-one correspondence between an erroneous case and a specific scientific procedure (such as “blind” testing). Blind testing, proficiency testing, and strong quality controls are among the things that can be done to promote better forensic practice.

The point that the report means to stress is that we need good scientific research to ascertain quantifiable measures of uncertainty, and to address the impact of the sources of variability and potential bias in forensic disciplines that rely on subjective assessments of matching characteristics. The results of this research will allow crime labs to establish mandatory operating procedures, proficiency tests, and quality controls to avoid errors in forensic analyses and expert testimony. In my view, we should do everything in our power to ensure that the forensic science community serves our system of justice as well as it can. We cannot afford not to do this, for there is too much at stake.

Thank you for allowing me to testify before the committee. All the best.

Sincerely,

A handwritten signature in black ink, appearing to read "H. T. Edwards", with a stylized flourish at the end.

Harry T. Edwards
Senior Circuit Judge