F10 The President's Council of Advisors on Science and Technology (PCAST) Report on Forensic Science: Why It Fails Foundational Validity

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After attending this presentation, attendees will have a clearer understanding of why the PCAST Report on forensic science has not negatively impacted the admissibility of comparative forensic science evidence in state and federal courts, and why this "scientific" Report was foundationally flawed from the outset.

This presentation will impact the forensic science community by allowing it to communicate the validity and reliability of its comparative sciences to the courts without being bound by the unnecessarily narrow standards set by PCAST. This presentation will also encourage the forensic science community to understand that additional research is needed to continuously improve the forensic sciences.

The PCAST Report, *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods*, issued in September 2016, endeavored to elucidate the findings of the National Academy of Sciences (NAS) Report.[2] As courts have pointed out, the PCAST Report added little to the realm of judicial analysis of validity and reliability of comparative-type forensic evidence. The Report fails to identify any general acceptance for the proposition that a black-box study is the *only* way to validate the foundation of a subjective discipline and disregards a plethora of studies demonstrating that examiners can reliably and accurately associate forensic evidence samples with known samples.

The PCAST Report also misstates statistical results of studies, miscalculates error rates, misunderstands the nature of foundational studies, and inaccurately claims the outer bounds of the confidence interval as the rate of error. The PCAST Report further inappropriately asserts that general error rates should be applied to the specific examiner and evidential analysis in the case at bar. Further, the Report arbitrarily sets the upper bounds of acceptable error rate for purposes of validity.

While the PCAST was a policy body, the Report purports to make "scientific findings," a role outside of its charter. The Report professes not to tell the judiciary what to do, for it is the courts that interpret the legal rules, but in a not-so-subtle bout of circular reasoning, PCAST boldly tells the courts what it arbitrarily determined was the single test for validity and reliability under Federal Rule of Evidence 702.

Although the Report fails to follow any scientific methodology in its construct, analysis, or publication, its defenders say the Report has value because of the few recommendations that might be helpful to the scientific community (i.e., those that recommend additional funding and research). Unfortunately, the PCAST timed its Report such that it was released just prior to the end of the Obama administration, with no time for the President, who supposedly asked for the Report, to fund the programs necessary for the continuous improvement of forensic science.

Nevertheless, as with the NAS Report, the forensic science community is taking the recommendations to heart and is continuing to conduct foundational research, including black-box studies. In the end, though, the PCAST Report was not peer reviewed, has an unacceptable error rate, is not generally accepted, failed to use standards and protocols for the review of the literature, and did not have the transparency expected of government reports.

Reference(s):

1. President's Council of Advisors on Science and Technology Report to the President, *Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods*. September 2016.
2. National Academy of Sciences, National Research Council, Strengthening *Forensic Science in the United States: A Path Forward*, Washington, DC: National Academies Press, 2009.

PCAST, NAS, Foundational Validity

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