



AMERICAN SOCIETY OF CRIME LABORATORY DIRECTORS, INC.

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Statement on September 20, 2016 PCAST Report on Forensic Science

On September 20, 2016, the President's Council of Advisors on Science and Technology (PCAST) issued the report to the President, "***Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods***," which contained seven (7) Scientific Findings and eight (8) Recommendations on the scientific validity of forensic sciences involving feature-comparisons.

The ASCLD Board of Directors has reviewed the official report from PCAST, and finds that while we do agree with some aspects of the PCAST report, we respectfully disagree with many of the Findings and Recommendations including the overarching methodology with which the analysis was performed.

ASCLD strongly agrees that additional financial investment from the Federal government into forensic science is sorely needed. From foundational and applied research funding to investment into operational capacity building and technological advancement, a strong financial investment from the Federal government is critical.

ASCLD also agrees that additional research can always be performed to further demonstrate the appropriate weight that should be afforded to the feature comparison disciplines, both in the capability of the science itself and in the capability of those that conduct examinations. This is how science evolves. PCAST's dismissal, however, of a wealth of existing research because it does not meet an arbitrary criteria of black box studies with an ideal sample size is unhelpful. ASCLD is aware that more than 2,000 post-2009 articles were submitted to PCAST for review during this year-long effort. Additionally, the former OSTP Subcommittee on Forensic Science Interagency Working Groups, AAAS, and several industry working groups either have or are currently developing extensive bibliographies, many of which do not appear to have been reviewed or given credibility.

ASCLD disagrees with discarding these studies as not credible simply for lack of black box studies or ideal sample size. ASCLD concurs that black box and white box studies are significantly important and helpful. Indeed, we sincerely appreciate that the Council highlighted a firearms study in which ASCLD participated. ASCLD does not agree, however, that black box studies are the singular method through which to judge an entire forensic discipline's reliability. ASCLD does not dispute that the proposed methodologies incorporated in the report are highly aspirational and rigorous; however, ASCLD is concerned that a one-size-fits-all approach is not always appropriate due to the specific research needs and unique evidence sample traits of each discipline. These disciplines have previously withstood both scientific and judicial scrutiny, aiding investigators, prosecutors, and defense attorneys throughout the criminal justice system.

In addition to the methodology of PCAST's review, ASCLD wishes to express concern over the following:

- **Practitioner involvement.** The report seems to favor that all scientific evaluation activities be performed completely separate from scientists with direct forensic science experience. ASCLD strongly disagrees with the removal of forensic scientists from the evaluation of scientific integrity or technical merit of analyses. ASCLD supports the involvement of academic scientists in the process, but strongly disagrees that these evaluations should be performed in a vacuum devoid of participation by the forensic scientists who can impart an applied knowledge and understanding to the research. Science is not specific or unique to academia or industry. It is the intersection of both that ensures true advancement and the collaboration of both paradigms is paramount to the continued improvement of forensic science.
- **OSAC “independence.”** ASCLD disagrees with the assertion that the NIST OSAC must be staffed with more “independent” scientists. ASCLD believes independence has already been demonstrated by the current OSAC composition, as several existing industry standards have already been referred to standards development organizations for revision in order to incorporate suggested improvements by OSAC units. ASCLD acknowledges there is an important need for input in OSAC from statisticians, metrologists, academic scientists, cognitive behavioral scientists, and legal experts; however, there is no evidence that the current process is broken or needs revision. In fact, ASCLD believes that great success has been shown in OSAC when these resources are engaged early in the process when standards and guidelines are in the development stage at the subcommittee level rather than later in the approval process only.
- **DNA mixture interpretation.** The report determines that, “...the interpretation of complex DNA mixtures with the CPI statistic has been an inadequately specified—and thus inappropriately subjective—method. As such, the method is clearly not foundationally valid.” ASCLD concurs with PCAST to the extent that the principle issue is the subjectivity and variability in the application of mixture interpretation guidelines within the community. ASCLD, however, urges PCAST to consider that the CPI statistic itself: (1) does not interpret complex DNA mixtures and; (2) is a valid statistical tool when properly applied to some DNA mixtures. The use of the CPI statistic is valid and fundamentally sound for use with DNA mixtures where all allelic peaks - after accounting for potential allele stacking and peak height variability - remain above the stochastic threshold. In summary, it is the inappropriate use of the CPI statistic by some practitioners rather than the CPI statistic itself that is not foundationally valid. As the PCAST report correctly acknowledges, new probabilistic software tools have been developed and are being made available to practitioners in an effort to achieve greater consistency in mixture interpretation. The use of new software tools, however, does not necessarily increase the objectivity of the analysis.
- **Simple proficiency tests.** The report indicates that the forensic community prefers proficiency tests not to be too challenging. ASCLD does not agree with this characterization of the entire community, regardless of who made the statement. ASCLD believes the majority of the forensic science community has, and continues, to implement rigorous quality assurance systems that include proficiency testing schemes that resemble the level of difficulty of casework.

While ASCLD has expressed disagreement with a number of aspects of the PCAST report on forensic science, we also wish to convey our desire to work collaboratively with PCAST and other federal agencies on continuing to improve forensic science. ASCLD remains committed to providing excellence in forensic science through leadership and innovation and encouraging the highest standards of practice in the field. The Board of Directors looks forward to continuing to partner with all members of the criminal justice community and any other group with the same interests.