



NATIONAL COMMISSION ON FORENSIC SCIENCE



Adjudication of Public Comments: Technical Merit Evaluation of Forensic Science Methods and Practice Recommendations and Views Documents

Subcommittee

Scientific Inquiry & Research

Type of Work Product

Adjudication of Public Comments on Final Draft Views and Recommendation Documents

Public Comment Summary

The documents were posted as proscribed by Commission by-laws. Seven responses were submitted during the public comment period (March 6 to April 5, 2016). These submissions are summarized below:

- One individual praised the document as “a well needed companion to the recommendations of the 2009 NAS report” and emphasized that the recommendation will “insure that all forensic disciplines will have validated methods as consistency from discipline to discipline is an important step to improve all of forensics.”
- Another individual stated support for the ideas but expressed concern over who was going to pay for the efforts.
- Another individual representing the American Society of Crime Laboratory Directors (ASCLD) noted that developmental validation efforts are only one aspect of furthering the science in forensic science and recommended supporting on-going efforts at both the national and international levels.
- One individual, a member of the Commission, provided multiple comments that expressed concern with suggestions being “vague and self-contradictory in places” and “not well-grounded in practicalities.” Clarification was requested on a number of points in the documents.
- An anonymous individual felt that the proposals were too restrictive and poorly planned by people from unrelated field “making the proposals unreasonable and unsound.”
- A statement of support for standardization in this profession was made along with a question regarding the requirements for a private laboratory.
- Lastly, an individual felt that the views document should not be limited to “test methods” but should be expanded to include practices for disciplines involving pattern impression evidence.

In addition, NIST leadership provided feedback to the subcommittee emphasizing that NIST is a non-regulatory agency and has limited capacity and scope. The preparation of “scholarly writing” on measurement science underpinning forensic science in the form of resource book

chapters or opinion articles in the *Journal of Research of NIST* was proposed with initial pilot projects in bite mark analysis, firearms & tool marks, and DNA.

Adjudication Process Used by Subcommittee:

The subcommittee met via teleconference on May 24, 2016. Comments and concerns were discussed and it was agreed that a few members of the subcommittee would draft revisions and adjudicate comments received. On June 2, 2016 the subcommittee voted to send the revised document to the Commission for a final vote.

Itemized Issues and Adjudication Summary:

Ted Hunt

1. This set of comments raises questions about the use and definition of key terms, including “documentary standards,” “test methods,” “developmental validity,” and “technical merit.” The importance of assessing validation within the context of a specific purpose or question was also raised.

We agree that it is essential to clearly define these terms, particularly as it is not uncommon for different professions to use different terms for the same concept, or to use different definitions for the same term. For example “developmental validity” is a term that is used in DNA analysis, but its meaning may not be familiar or clear in other contexts. We also agree that it is important to discuss validation of a method (or practice) for a specific use or question. Based on these comments, we have defined key terms within the revised documents. Given the confusion between different types of validation, technical merit - as defined by the OSAC Technical Merit Worksheet - will now be used in the Views and Recommendations documents. This definition of technical merit will include both fitness-for-purpose and validation. It is defined as “studies and data that establish the basis for a particular claim in terms of a technique’s or discipline’s accuracy, capabilities and limitations,” and we also provide a more comprehensive description of the component criteria for technical merit based on the OSAC Technical Merit Worksheet. We have also emphasized that the focus of the independent scientific evaluations is on the technical merit of the forensic science disciplines upon which test methods and practices are based. This concept of technical merit is distinct from the concepts contained within “documentary standards,” which are defined as “written agreements containing technical specifications or other precise criteria that may contain rules, guidelines, or definitions of characteristics” for a test method (see citation in Views document); these standards are developed to foster consistency and order across practitioners. These definitions should clarify the distinction between the evaluation of technical merit and the development of documentary standards, and the logic of the former preceding the latter. Additionally, the following sentence has been revised to further clarify this distinction in the Views document: “Completion of technical merit, of which validity is a component, should precede the evaluation of documentary standards to be placed on the Organization of Scientific Area Committees (OSAC) Registry of Approved Standards.” (p. 3).

2. Another theme in this set of comments concerned the respective roles of NIST and OSAC, and questioning of the need for or the desirability of NIST assuming a “gatekeeper” role. This commenter also raised the question of who should be responsible for forensic method validation, and expressed concern about placing that responsibility “solely into the hands of a few non-practicing research scientists.”

The “gatekeeper” language was removed and replaced with the performance of “independent scientific evaluation.” Rather than being inconsistent with Frye and Daubert, this recommendation provides a basis for strengthening the ability of the courts to assume the roles described in Frye and Daubert. That is why the recommendations include publication of the resource documents (i.e., the evaluations based on the independent scientific investigations), and envision their use as resources for judges and other members of the criminal justice system.

This document supports the idea that the expertise of the NIST scientists, specifically expertise relating to measurement and validation studies, should not be minimized as “non-practicing research scientists,” and is vital to assembling the “broad, relevant, qualified scientific community” that the commenter (and the Subcommittee) endorses.

This document also endorses the need for independent scientific evaluation of the technical merit of forensic science disciplines. The Subcommittee defines “independent” as a body that is fair, impartial, and without conflict of interest in the results of the evaluation. An entity’s independence does not imply that this work will be conducted without the contribution of individuals who are knowledgeable of a specific discipline. Indeed, this type of subject-matter expertise is sought as part of the NIST evaluation process. Coalescing around the principle that independent scientific evaluations of forensic science disciplines will advance the Commission’s mission to strengthen forensic science and will increase the opportunity to develop consensus on the science that supports the important work that forensic scientists perform.

Both the Recommendation and the Views documents cite NIST’s charge to “test and validate select and existing forensic science practices and standards” in the MOU between DOJ and NIST. Given this charge, NIST’s willingness to take on this responsibility, and its standing as an independent scientific entity, and its experience developing resource documents, the Subcommittee believes that NIST is well-positioned for the task.

The Recommendation also advises the use of pilot studies to establish the design and requirements of the resource documents. Transparency and the use of pilots will allow public feedback on the development of the resource document criteria.

3. This commenter also noted that internal validation is not a “performance check”

The term “performance check” was removed and internal validation is likened

to “Accommodation and Environmental conditions” testing. The use of the original term was not meant to diminish the substantial time and effort that goes into internal validation testing. However, internal validation is still distinguished from foundational validation (which produces the data described in ISO 17025 5.4.5.1 and 5.4.5.3) and technical merit as defined in the Views and Recommendation documents.

4. The commenter raised questions regarding how NIST will communicate the results of its evaluation

This an important point and the document has been revised to state that NIST will issue the resource documents through a centralized publication and that these resource documents will be publicly available. Assuring the dissemination of the results of these scientific investigations, for use by people within the criminal justice, forensic science, and research communities, is a key part of the Recommendations.

5. The commenter raised concerns that the Recommendations “make the perfect the enemy of the good” and would create unnecessary and ill-advised delays in the development of documentary standards by OSAC.

The OSAC Registry of Approved Standards states that “the methods it contains have been assessed to be valid.” The Subcommittee acknowledges that no test method or practice will ever be perfect, but unless the OSAC Registry changes its criteria for inclusion, the minimum acceptable criteria must be validity. The intent here is not to prevent the OSAC from developing documentary standards. For forensic science disciplines that have not yet met technical merit, there are many and varied documentary standards that are critical for the application of a discipline that can be set as NIST conducts its investigations, such as evidence collection, preservation, processing, and documentation. For forensic science disciplines that have a well-established scientific basis, an independent scientific review may already exist or may be achievable in the interim pending a NIST evaluation.

ASCLD

1. NIST should not be the only entity conducting developmental validation research.

The Recommendation and Views documents do not restrict other research groups or agencies from conducting validation research. Rather, it asks NIST to evaluate the existing data and research and publish resource documents describing the state of a particular forensic science discipline’s technical merit.

2. Suggestion that “forensic science practitioners need to be included in the standard development process to establish developmental method validation standards and complete validation studies.”

The Recommendation and Views documents do not limit the groups or entities that can develop standards and conduct technical merit research. To make this

point explicit, the following language was added to the Views document:
“In recommending that NIST assume the role of independent scientific evaluator within the criminal justice system for technical merit forensic science disciplines, the Commission encourages universities, scientific agencies, and other research entities, such as Statistical and Applied Mathematical Sciences Institute (SAMSI), to conduct research investigating the technical merit of forensic science disciplines. While NIST may have a centralized evaluative role, the Commission envisions that the data and research NIST will evaluate will be generated by the robust and diverse scientific research community as well as NIST.”

3. Suggestion that The Commission should not stop the current efforts for standards development that are being developed by the Organization of Scientific Area Committees.

In order for a standard to be put on the OSAC Registry, it must be valid based on technical merit. The Recommendation and Views documents express that NIST (or an independent scientific evaluation conducted in advance of a NIST evaluation) confirm the underlying technical merit of a forensic science discipline in advance of documentary standards setting. The third recommendation has been revised to state:

Recommendation #3: The Organization of Scientific Area Committees for Forensic Science (OSAC) leadership, the Forensic Science Standards Board (FSSB), should commit to placing consensus documentary standards on the OSAC Registry of Approved Standards for only those forensic science test methods and practices where technical merit has been established by NIST, or in the interim, by an independent scientific body.

Anonymous

1. Suggestion that the proposal is not well-planned and too restrictive.

The Recommendations and Views are not meant to be project planning documents. Rather, they provide the rationale, purpose, and support for the development of the NIST resource documents.

Mike Wickham

1. Question regarding use of standards for those in private firms.

Both private and public firms should use forensic science tests and methods that meet technical merit criteria.

Jennifer Friedman

1. Suggestion to add “practice” along with “test methods”

We have incorporated this suggestion by adding “practice” to the title of the Recommendation document and at appropriate places throughout the Recommendation and Views documents.

Marc Bowers

1. Question regarding identifying funders to support the NIST program.

The Views document asks that additional resources be made available to support this new capacity.