



ASA's Comments on Forensic Science in Response to Request for Information on the Development of the Organization of Scientific Area Committees (OSAC) for Forensic Science 2.0

Prepared by the ASA Advisory Committee on Forensic Science

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In response to the request for information on the future of OSAC, the American Statistical Association's (ASA) and its Advisory Committee on Forensic Science offers the following remarks. The ASA Advisory Committee is comprised of nine statisticians; nearly all participate in OSAC. The members are identified below, at the end of the comments. The comments were also endorsed by other statisticians who serve on OSAC Scientific Area Committees or Subcommittees. These individuals (and their OSAC positions) are also listed below.

Purpose

The primary purpose of the OSAC is to develop scientifically-sound standards, guidelines and best practice documents for the various forensic science disciplines. Progress has been slow; encouragingly, subcommittees and committees are beginning to produce a good number of draft documents. The ASA Advisory Committee offers two observations that we believe will be useful as NIST, DOJ and others plan for the development of OSAC 2.0.

- 1) OSAC currently operates in a "bottom up" fashion. Ideas for standards, guidelines and best practices are typically generated at the subcommittee level. Draft documents are then created and these are reviewed by scientific area and resource committees. Certainly this approach has some logic to it. Practitioners in the various disciplines have important ideas as to the needs of their communities. We believe, however, there is a need for subcommittee-generated ideas to be complemented by "top down" prioritization. For example, the FSSB might identify highest priority documents for each year such as standards for conclusions, reporting, and training. Integrating "top down"

prioritization has several benefits for the work of OSAC. It can insure that OSAC produces standards and guidelines that address high priority areas and are coherent across the different disciplines. Also, having the various subcommittees working on the same topics at the same time increases the opportunity for discussions across disciplines.

- 2) OSAC subcommittees are working on a very diverse set of standards and guidelines. This includes technical standards that address the needs of the disciplines such as appropriate procedures for detecting shoeprints and requirements for technologies for performing chemical assays. It also includes standards or guidelines for training of examiners, proficiency testing of examiners, and appropriate reporting/conclusions. Though scientists and researchers can contribute to all of these, it is our view that the diverse input to OSAC standards provided by including researchers, academics and technologists is especially important in some of these latter standards (training, proficiency testing, reporting, conclusions) and that these should be prioritized. The OSAC has a science focus and its broad aim is to ensure a sound scientific foundation for forensic science practice. We believe that the work of the subcommittees can benefit most from outside cross-disciplinary input on priorities and strategies for moving the various disciplines forward.

Structure

In terms of OSAC structure, we comment here only on the participation and role of statisticians. The OSAC consists of 1 FSSB, 5 SACs, 24 subcommittees, and 3 resource committees (RCs). No statisticians currently serve on any of the three resource committees. Of the remaining 30 OSAC units, statistics is represented on the FSSB, 4 of 5 SACs, and 17 of 24 subcommittees, usually with only one statistician (two of those units have two statisticians). While some statisticians have reported positive experiences—that their input has been welcomed and well-received by other members on their units—the fact remains that, when an OSAC unit has only one statistician, the input from this person can be easily dismissed by the unit because of the large proportion of forensic practitioners that dominate the unit. Indeed, this happened early on to several OSAC statisticians. For this reason, the OSAC statisticians formed a Statistics Task Group, with the FSSB statistician serving as its chair. This Statistics Task Group (STG) provides an opportunity for individual statisticians to get input from peers and, where there is a consensus on an issue, for the larger group to provide input to the FSSB, SAC or subcommittee. Concerns have been raised about the STG from at least two sources. Some non-statistician OSAC participants have complained that the STG gives the statisticians two opportunities to comment on developing documents, once as an individual in the relevant subcommittee and then as part of STG during its review of the drafted document. At the same time, STG members have found it challenging to perform double duty, reviewing standards in their home discipline as a member of the SAC/subcommittee and then finding time to review standards from other groups as well. In addition, statisticians believe that the input of the STG is easily ignored because it is viewed as an ad hoc group and consequently their input may receive less attention than input received from the formal OSAC resource committees.

We suggest three strategies for improving the ability of statisticians to contribute to the OSAC. Each has advantages and disadvantages. We hope the suggestions will stimulate more ideas:

- A. Remove statisticians from the units, and place them in a new "Statistics Resource Committee". This approach will raise the stature of the STG to match those of the other

resource committees. A severe disadvantage to this approach arises when statisticians are removed from the unit, as they are most effective in their collaborative work when they understand the discipline which they serve. Removing them from their subcommittees risks reducing their effectiveness.

B. Keep individual statisticians on the individual OSAC units, and **in addition**, create a Statistics Resource Committee (SRC). The SRC would consist of different individuals and operate like the other OSAC RCs (commenting on standards and guidelines as they are developed by the subcommittees). In principal, this approach might be ideal, but in practice relatively few statisticians have volunteered so populating both individual OSAC units and an SRC would be difficult.

C. Remove statisticians from (many of) the subcommittees and concentrate them on the Scientific Area Committees. Having two or three statisticians on the SAC would allow them to serve a number of subcommittees while focusing on the standards and guidelines that would most benefit from their use. Statisticians would no longer be isolated individuals. This strategy would likely require increasing the size of the SACs and might also be viewed by other OSAC participants as an overrepresentation of statisticians on those groups.

The ASA Advisory Committee on Forensic Science suggests that NIST/DOJ work with current OSAC leadership (FSSB, SAC chairs, subcommittee chairs) and the current OSAC statisticians to develop an improved plan for statistics participation in OSAC 2.0.

Participation

The OSAC committees and subcommittees were originally designed to have membership distributed such that 70% are forensic science practitioners (representing federal, state and local agencies), 20% are researchers and academics (including statisticians) and 10% are research development and technology partners. The motivation for including the latter two groups was to ensure that input from a wide range of viewpoints was incorporated in the development of standards and guidelines. Indeed, the 2017 American National Standards Institute Essential Requirements document¹ talks about the importance of balance in the standards development process and explicitly mentions the importance of not allowing the process to be dominated by a single interest category, individual or organization. The ASA Advisory Committee on Forensic Science continues to believe in the importance of diverse membership for OSAC units. Development of science-based standards and guidelines that are fit for purpose requires input from forensic practitioners, the legal community and the broader scientific community.

We are concerned however that, for a variety of reasons, the goals that were set for populating the committees and subcommittees have not been met. One reason is that in some areas it was not possible to identify a sufficient number of academics, researchers or technologists who were sufficiently well-versed in the forensic discipline. For example, as described above only about 70% of the subcommittees were able to appoint statisticians. A second reason is that many of the researchers and technologists who were appointed either were or still are employed as forensic practitioners as well. Our experience has been that many of these individuals still maintain a view more consistent with being an active forensic examiner and they are less able

¹https://share.ansi.org/shared%20documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/2017_ANSI_Essential_Requirements.pdf

to bring in the independent outside viewpoint that was desired. We are concerned that the input from science into forensic practice, a need identified by the 2009 National Academies report, is still extremely limited.

We encourage NIST, DOJ and the FSSB to increase their efforts to attract researchers and technologists to participate in OSAC. It seems likely that OSAC will have to bring in people with relevant scientific knowledge and provide them with sufficient time to become knowledgeable about the forensic discipline.

In closing, we thank NIST for the opportunity to provide input to the ongoing discussions regarding OSAC 2.0.

American Statistical Association Advisory Committee on Forensic Science

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Endorsed by the following members of the OSAC Statistics Task Group

David Banks (Member, Odontology Subcommittee)

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