

National Commission on Forensic Science: Overview of Standards as it Relates to the Forensic Science Community

National Institute of Justice (NIJ)
Office of Investigative and Forensic Sciences
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NIJ

Topics for Discussion

- What is a standard?
- What is the process for developing documentary standards?
- Scientific Working Groups (SWGs)
- National Resource Council (NRC) of the National Academies, Strengthening Forensic Science in the United States: A Path Forward, February 2009
- Summary of work from the Standards Practices and Protocols Interagency Working Group (SPPIWG)

What is a Standard?

- **Measurement Standard**

Frequently used as a reference in establishing measured quantity values and used for metrological traceability through calibration of other measurement standards, measuring instruments, or measuring systems.

- **Documentary Standard***

A document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.

*ISO/IEC Guide 2:2004 Standardization and Related Activities – General Vocabulary

Different Types of Documentary Standards

- **guide**, n— a compendium of information or series of options that does not recommend a specific course of action. A guide increases the awareness of information and approaches in a subject area.
- **practice**, n—a definitive set of instructions for performing one or more specific operations that does not produce a test result. Examples: assessment, collection, inspection, sampling, and training.
- **specification**, n— an explicit set of requirements to be satisfied by a material, product, system, or service. Examples: physical, mechanical, or chemical properties, quality, or performance criteria.
- **test method**, n— a definitive procedure that produces a test result. Examples: identification, measurement, and evaluation of one or more qualities, characteristics, or properties.

ASTM International: http://www.astm.org/COMMIT/Blue_Book.pdf

American National Standards Institute (ANSI): Essential Requirements for Developing a Standard

Due process: any person (organization, company, government agency, individual, etc.) with a direct and material interest has a right to participate by: a) expressing a position and its basis, b) having that position considered, and c) having the right to appeal.

ANSI Essential Requirements:

<http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/American%20National%20Standards/Procedures,%20Guides,%20and%20Forms/2008%20ANSI%20Essential%20Requirements/2008%20ANSI%20Essential%20Requirements%20031108.pdf>

Due Process Requirements

- **Openness**

Participation shall be open to all persons who are directly and materially affected by the activity in question.

- **Lack of Dominance**

The standards development process shall not be dominated by any single interest category, individual or organization.

Due Process Requirements

- **Balance**

The standards development process should have a balance of interests. Participants from diverse interest categories shall be sought with the objective of achieving balance.

- **Appeals**

The process shall contain an identifiable, realistic, and readily available appeals mechanism for the impartial handling of procedural appeals regarding any action or inaction.

Standards Developing Organizations (SDO)

- Hundreds of Accredited SDOs worldwide
- Currently, only one is used for documentary standards in the forensic sciences - ASTM International
- ASTM International provides an administrative process and support for creating, reviewing, and publishing documentary standards

Scientific Working Groups (SWGs)

- SWGs play an important role in the forensic science community. They typically represent a forensic discipline and are the primary provider of standards, guidelines, or best practices.

SWG Mission

- Define the scope and practice areas of the profession
- Standardize operating procedures, protocols, and terminology
- Promote training, continuing education, research, and standardization to ensure the accuracy, reliability, and validity of forensic testing

Evolution of SWGs

- The FBI initiated the first Scientific Working Groups (SWGs) in the early 1990s to facilitate consensus around forensic science operations among federal, state, and local agencies
- NIJ funded 10 SWGs through an Interagency Agreement with the FBI until 2012
- During 2012, NIJ began overseeing the administrative management of the 10 SWGs
- Most Recently: SWGTOX, SWGMDI, SWGDVI, SWGGEO, and SWGWILD (2010-2012)
- There are currently 21 different SWGs that have produced over 280 work products

21 Active Scientific Working Groups

1. FISWG (Facial Identification)
 2. SWGANATH (Forensic Anthropology)
 3. SWGDAM (DNA)
 4. SWGDE (Digital Evidence)
 5. SWGDOC (Forensic Document Examination)
 6. SWGDOG (Dog & Orthogonal Detector Guides)
 7. SWGDRUG (Seized Drugs)
 8. SWGDVI (Disaster Victim Identification)
 9. SWGFAST (Fingerprints)
 10. SWGFEX/TWGFEX (Fire Debris & Explosives)
 11. SWGGEO (Geological Materials)
 12. SWGGSR (Gunshot Residue)
 13. SWGGUN (Firearms & Toolmarks)
 14. SWGIT (Imaging Technologies)
 15. SWGMAT (Materials Analysis)
 16. SWGMDI (Medicolegal Death Investigation)
 17. SWG-SPEAKER (Voice Analysis)
 18. SWGSTAIN (Bloodstain Pattern)
 19. SWGTOX (Toxicology)
 20. SWGTREAD Shoeprint & Tire Tread Evidence)
 21. SWGWILD (Wildlife Forensics)
- Total Membership: Over 600

National Resource Council (NRC) of the National Academies: Comments on SWGS

- *Each SWG has a 'formal' structure and functions in accordance with its bylaws. Membership is at the discretion of the chair of the working group. Most SWGs include members from both public and private organizations. Meetings held at least once a year allow SWG members to discuss issues of concern and reach consensus on documents drafted throughout the year. The SWGs create, prepare, and publish standards and guidelines for their constituents in the forensic science community. These documents provide crime laboratories a basis for operational requirements, although the committee found that some standards and guidelines lack the level of specificity needed to ensure consistency.*

National Resource Council (NRC) of the National Academies: Comments on SWGS

- *However, enforcement of the guidelines is left to the appropriate governing agency and each group's internal policies. The SWGs generate voluntary guidelines and protocols, which carry no force of law. Nonetheless, the SWGs have been a source of improved standards for the forensic science disciplines and represent the results of a profession that is working to strengthen its professional services with only limited resources.*

National Resource Council of the National Academies, Strengthening Forensic Science in the United States: A Path Forward, February 2009 (Page 202)

NRC: Key Comments on Standards

- “Despite the proliferation of standards in many of the forensic science disciplines, their voluntary nature and inconsistent application make it difficult to assess their impact. Ideally, standards should be consistently applicable and measurable”
- “Appropriate standards must be coupled with effective systems of accreditation and/or certification that include strong enforcement mechanisms and sanctions.”

National Resource Council of the National Academies, Strengthening Forensic Science in the United States: A Path Forward, February 2009 (Page 203-206)

Standards Practices and Protocols Interagency Working Group (SPPIWG): Process for Evaluating Standards in the Forensic Sciences

- Obtained input from relevant forensic science organizations, state and local practitioners
- Identified Standards Development Organizations (SDOs)
- Inventoried existing standards
- Evaluated standards' abilities to meet needs

SPPIWG Analysis of SWGs

- The SWGs were established as a vehicle to improve forensic discipline practices and build consensus within the federal, state, and local forensic community. Traditionally, little direction was given beyond that mandate, resulting in a diversity of perceived purpose and objectives, structure, communication of the work product, and support given.

SPPIWG Analysis of SWGS

- As a whole, there is a lack of uniform operational and organizational practices
- SWGs do not equally produce
- SWGs rely on discretionary funding with no formal mechanism for long term planning
- Little accountability, oversight, or enforcement capability
- Dissemination strategies are different

SPPIWG Analysis of SWGS

- It would be of value if there was a lead agency to provide the appropriate infrastructure and governance to ensure sustainability, uniformity, and accountability towards standards development to enhance the forensic practice.

Next Step

- The efforts of NIST and the Notice of Inquiry (NOI) will be discussed by Mark Stolorow in more detail on day two.

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