

UPCOMING TRAININGS & CONFERENCES

NDA is making its National Courses available virtually in light of health and safety concerns over COVID-19.

Check out a full list of NDA's virtual learning sessions at

► ndaa.org/training-courses/.

NDA's Mastering Masking Digital Course/ On Demand Training (CLE Available)

► ndaa.org/training/mastering-masking-2/

NDA's Human Trafficking and the Impact on Commercial Driver's Licenses/On Demand Training

► ndaa.org/training/human-trafficking-and-the-impact-on-commercial-drivers-licenses/

NDA's Prosecuting DUI Cases Online Course/ On Demand Training (CLE Available)

► ndaa.org/training/prosecuting-dui-cases/

Revisions to Model Penal Code Present Child Safety Risks (Live Webinar)

November 3, 2021 @ 2:00 p.m. ET

DOJ Election Threats Task Force (Live Webinar)

November 9, 2021 @ 2:00 p.m. ET

Understanding, Interrupting & Minimizing Conscious & Unconscious Bias (Live Webinar)

November 10, 2021 @ 11:30 a.m. ET

RESOURCES

Impaired Driving Resources

► ndaa.org/programs/ntl/

CDL-Related Resources

► ndaa.org/programs/ntl/commercial-drivers-license/

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Forensic Science Standards Development—Get Informed & Get Involved

By Jennifer Limoges, Associate Director of Forensic Science/ Toxicology, New York State Police Forensic Laboratory System

The use of science in the courtroom is more critical than ever in today's criminal justice system, and forensic science standards can help improve the consistency and reliability of the forensic evidence and expert testimony that is introduced into the courts. This article provides a general introduction to forensic standards and the work of the National Institute of Standards and Technology (NIST) Organization of Scientific Area Committees (OSAC) and the Academy Standards Board (ASB) to develop these documents. Then detailed information is presented on Forensic Toxicology standards that impact impaired driving investigations.

The Call for Standards in Forensics

The 2009 National Research Council (NRC) report, *Strengthening Forensic Science: A Path Forward*, critically reviewed the forensic sciences in the United States, and encouraged the development and implementation of standards.

“Standards and best practices create a professional environment that allows organizations and professions to create quality systems, policies, and procedures and maintain autonomy from vested interest groups. Standards ensure desirable characteristics of services and techniques such as quality, reliability, efficiency, and consistency among practitioners.”

► www.nap.edu/catalog/12589/strengthening-forensic-science-in-the-united-states-a-path-forward

In response to the NRC report, the NIST created the Organization of Scientific Area Committees (OSAC) for forensic science, with the goal of

“Strengthening the nation’s use of forensic science by facilitating the development of technically sound standards and guidelines and encouraging their use throughout the forensic science community.”

► www.nist.gov/osac

The various OSAC Subcommittees draft discipline-specific documents. The OSAC also provides legal, human factors, statistics, and quality task groups to support the various subcommittees in their efforts. Their seed documents are then forwarded to a standards developing organization (SDO) to be developed and published through consensus based processes. The OSAC subcommittees currently work with four different SDOs:

- Academy Standards Board (ASB)
- American Dental Association (ADA)
- ASTM International
- National Fire Protection Association (NFPA)

The Academy Standards Board (ASB)

The American Academy of Forensic Sciences (AAFS) is a multidisciplinary professional organization that provides leadership to advance science and its application to the legal system. Following the NRC report and the creation of the OSAC, the AAFS immediately recognized the unique and important role it should have in forensic science standards. The AAFS created the ASB as the first US SDO dedicated entirely to the development and maintenance of forensic science standards. The ASB is accredited by the American National Standards Institute (ANSI). Its procedures provide for due process based on openness, balance, and consensus; and they ensure that all interested and affected parties have an opportunity to participate. The ASB currently has thirteen consensus bodies:

- Anthropology
- Bloodstain Pattern Analysis
- Crime Scene Investigation
- Disaster Victim Identification
- DNA
- Dogs and Sensors
- Firearms and Toolmarks
- Footwear and Tire

The use of science in the courtroom is more critical than ever in today’s criminal justice system.

- Forensic Document Examination
- Friction Ridge
- Medicolegal Death Investigation
- Toxicology
- Wildlife Forensics

Each consensus body is comprised of up to twenty-five voting members representing one of seven interest categories:

- Academics and Researchers
- General Interest
- Jurisprudence and Criminal Justice
- Organizations
- Producer
- User—Government
- User—Non-Government

In addition to the open and balanced development process, the American National Standards published by the ASB are currently *available at no charge to the general public*. Anyone can go to the ASB website and access the standards: ► www.asbstandardsboard.org.

Your Role in the Process

These standards will have a direct and substantial impact on your work. They can help provide confidence that the forensic testing performed was sufficiently validated and properly conducted; that the personnel involved are properly trained and qualified; and that the testimony provided is within the constraints of scientific capabilities and limitations.

As a key stakeholder of forensic science services, it is imperative that the legal community participate in the standards development process. In particular, the public comment period is critical to improving the documents and ensuring all views have the opportunity to be considered. Documents open for public comment can be found on the ASB website at ► www.asbstandardsboard.org/notice-of-standard-development-and-coordination.

To learn of when documents are open for comment and when they are published as American National Standards, subscribe to the ASB Newsletter by emailing asb@aafs.org and ask to be added to the distribution list. To stay current on OSAC activities, visit their News & Communications page at ► www.nist.gov/osac/news-communications.

Members of the legal community can also apply to serve on ASB Consensus Bodies or the OSAC Legal Task Group. **The ASB has just announced a Call for Members which is open through November 19, and more participation from the Jurisprudence and Criminal Justice interest category is needed.** Go to the ASB website for details and an application: ► www.asbstandardsboard.org. Details about volunteering for OSAC can be found at ► www.nist.gov/osac/apply-join-osac.

It is imperative that the legal community participate in the standards development process.

Forensic Toxicology Standards and DUI Cases

Toxicology testing and expert testimony are key elements in impaired driving investigations. The testing performed must be relevant, reliable, and based on sound scientific principles. The subsequent expert opinions and testimony must be unbiased and supported by the scientific literature. Forensic science standards play an important role in ensuring these priorities are met, and the Academy Standards Board (ASB) has published several American National Standards on these topics. They can be downloaded from the ASB website:

► www.asbstandardsboard.org/published-documents/toxicology-published-documents.

Of particular importance is **ANSI/ASB Best Practice Recommendation 037, *Guidelines for Opinions and Testimony in Forensic Toxicology***, First Edition, 2019. This guideline discusses written and oral expert opinions and testimony in forensic toxicology. It provides examples of what would generally be considered appropriate within the field. It also discusses areas that may not have sufficient scientific consensus, or may be beyond a forensic toxicologist's expertise, and are therefore generally considered to be inappropriate opinions and testimony to offer.

The guideline can help attorneys develop their direct examination questions to be consistent with what is considered appropriate expert opinion and testimony. It can also help to cross examine witnesses whose testimony may be inconsistent with the best practice recommendations.

The ASB has also published toxicology standards related to testing and reporting. The following are some of the most relevant ones for impaired driving, along with a brief description of their purpose.

- **ANSI/ASB Standard 120, *Standard for the Analytical Scope and Sensitivity of Forensic Toxicological Testing of Blood in Impaired Driving Investigations***, First Edition, 2021

This standard establishes the drugs that need to be tested for in blood from suspected impaired drivers, including how sensitive the tests need to be for those drugs. Adherence to this standard will ensure that the drugs most relevant to impaired driving investigations (based on prevalence and effects) are tested for at appropriate levels. The standard was adapted from the more comprehensive DUID lab recommendations that have been published in the *Journal of Analytical Toxicology (JAT)*, and are regularly updated by the National Safety Council's Alcohol, Drugs, and Impairment Division. The 2021 recommendations update is available as open access from *JAT*: ► doi.org/10.1093/jat/bkab064.

- **ANSI/ASB Standard 036, *Standard Practices for Method Validation in Forensic Toxicology***, First Edition, 2019

Validation provides objective evidence that a test method is fit for its intended use, and it identifies the method's limitations. Before using a method for testing casework samples, the laboratory must conduct experiments related to bias, precision, interference, limits of detection, and limits of quantitation, among other criteria.

- **ANSI/ASB Standard 054, *Standard for a Quality Control Program in Forensic Toxicology Laboratories***, First Edition, 2021

Quality control (QC) practices are essential to demonstrating that a validated method continues to be fit for purpose. QC provides concurrent objective evidence to support the reliability of an individual test result, as well as to monitor a test method's performance over time.

- **ANSI/ASB Standard 017, *Standard Practices for Measurement Traceability in Forensic Toxicology***, First Edition, 2018

Traceability provides confidence and reliability in test results. Laboratories can establish measurement traceability through the use of certified reference materials and calibrated equipment.

Toxicology testing and expert testimony are key elements in impaired driving investigations.

- **ANSI/ASB Standard 053**, *Standard for Report Content in Forensic Toxicology*, First Edition, 2020
Forensic toxicology results must be reported in a clear, comprehensive, and accurate manner.

As these standards get developed and published, it will take time for laboratories to reach full compliance. Labs must dedicate resources to review each standard and identify potential gaps within the laboratory operations. Addressing those gaps may mean additional validation studies need to be performed, or budgets need to be increased to support calibration services. New methods may need to be developed and validated to add new drugs or lower the detection limits. These improvements always need to be balanced with turnaround time and backlog reduction demands.

Forensic toxicology labs are committed to continuous improvement, and there is widespread support and involvement in the standards process. Professional organizations are providing training and tools to help labs fully implement these standards. Advocates are working at the national level to increase funding for toxicology labs, and grant sources are allocating funds to support standards adoption. You can support this process by contributing to the development of the standards during public comment periods, volunteering for a consensus body or working group, and collaborating with your tox labs and expert witnesses to encourage adoption of the standards.

Labs must dedicate resources to review each standard and identify potential gaps within the laboratory operations.

About the Author

Jennifer Limoges (jennifer.limoges@troopers.ny.gov) is the Associate Director of Forensic Science/Toxicology for the New York State Police Forensic Laboratory System. She has over 25 years' experience in forensic toxicology, and regularly provides training at both the local and national level to toxicologists, law enforcement officers, and attorneys on impaired driving topics.

Ms. Limoges is an active member of the Society of Forensic Toxicologists (SOFT) and the American Academy of Forensic Sciences (AAFS), and is a longstanding member of the SOFT/AAFS Drugs & Driving Committee. She is part of the National Safety Council's Alcohol, Drugs, and Impairment Division, and serves on their Executive Committee. She co-authored the 2013 *Journal of Analytical Toxicology (JAT)* publication "Recommendations for Toxicological Investigation of Drug Impaired Driving and Motor Vehicle Fatalities," as well as the 2017 and 2021 updates.

Ms. Limoges is also very active in standards development within the forensic science community. She worked to establish the Academy Standards Board (ASB), the AAFS's accredited standards development organization, and currently serves on the ASB's Board. She is also an affiliate of the NIST Organization of Scientific Area Committees (OSAC) Forensic Toxicology Subcommittee.