

W19 Most Valuable Publications (MVPs) of Forensic DNA: Examining the Most Valuable Publications in the Field

*John M. Butler, PhD**, National Institute of Standards and Technology, Gaithersburg, MD 20899; *Robin W. Cotton, PhD**, Boston University School of Medicine, Boston, MA 02118; *Charlotte J. Word, PhD**, Richmond, VA 23235-0153; *Mechthild K. Prinz, PhD**, John Jay College of Criminal Justice, New York, NY 10019

Learning Overview: After attending this workshop, attendees will have gained an understanding of the principles involved in DNA analysis and interpretation, knowledge of core foundational literature supporting these principles, and information that can strengthen training programs for DNA analysts.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by contributing to the creation of a defined body of knowledge covering historical and foundational literature, published validation studies, and recent, relevant publications that can fortify reliable forensic DNA analysis and interpretation.

Effective training and continuing education are crucial to keep up with evolving forensic DNA technologies and applications. Forensic laboratories invest in the continuing education of their staff. Universities with forensic science programs seek to prepare their students to be future contributing caseworkers. Stakeholders in the criminal justice system (e.g., law enforcement personnel, lawyers, and judges) using DNA results also benefit from regular training and continuing education to understand capabilities and limitations of methods and practices. Forensic scientists, students, and stakeholders can profit from drawing from a common informative knowledge base.

Thousands of publications in dozens of peer-reviewed journals exist on the topic of forensic DNA. This ever-growing body of scientific literature becomes increasingly challenging to monitor, much less incorporate into forensic laboratory training programs. For forensic scientists in the trenches working cases, understanding which research publications are most informative would be helpful. DNA technical leaders and analysts could benefit from receiving regular updates on relevant and available articles and the creation of lists of relevant articles in specific areas of interest to forensic DNA casework. This workshop will introduce attendees to an initial effort to identify and describe the MVPs in the field.

The National Institute of Standards and Technology (NIST) has been congressionally funded to perform scientific foundation reviews of select forensic disciplines. These reviews are intended to identify and document what is well known and well supported empirically in a forensic field and identify gaps that need further study. Over the past several years, the abundant literature on DNA mixture interpretation, which is the initial NIST foundation review, has been gathered and examined. An important goal of this effort is to identify, consolidate, and share core principles and supporting publications with the community to encourage deeper learning and understanding of forensic DNA.

Based in part from the NIST review and in discussions with experienced forensic DNA scientists, an initial list of 400 informative publications has identified across 26 topic categories in forensic DNA. This list builds upon references cited in the July 2020 Scientific Working Group on DNA Analysis Methods (SWGDM) Training Guidelines and efforts underway within the Organization of Scientific Area Committees for Forensic Science (OSAC) Biology/DNA section.¹ The information learned in this workshop will support published training standards from the AAFS Standards Board (ASB) DNA Consensus Body and on the OSAC Registry as well as professional development described in section 16 of the recently updated Federal Bureau of Investigation (FBI) Quality Assurance Standards.²⁻⁴

Reference(s):

1. *SWGDM Training Guidelines*. (2020). Available at <https://www.swgdam.org/publications>.
2. *ASB Published Documents on Forensic DNA*. Available at <http://www.asbstandardsboard.org/published-documents/dna-published-documents/>.
3. *OSAC Registry*. (2020). Available at <https://www.nist.gov/topics/organization-scientific-area-committees-forensic-science/osac-registry>.
4. *FBI Quality Assurance Standards for Forensic DNA Testing Laboratories*. (2020). Available at <https://www.fbi.gov/file-repository/quality-assurance-standards-for-forensic-dna-testing-laboratories.pdf/view>.

Forensic DNA, Scientific Literature, Training Standards