



Virtual Workshop Series: 3D Firearm Imaging

August 21, 2024
2:00 – 3:30PM ET

**Session 1: Introduction to 3D Firearm Microscopy,
Instrumentation, and Measurement Practices**

Xiaoyu Alan Zheng, National Institute of Standards and Technology
Rachael Gominsky, Federal Bureau of Investigation

Session Overview: 3D Firearms imaging systems are becoming more commonplace in forensic laboratories. While they provide improved imaging and analysis, there are new considerations examiners need to be aware of when using these systems. In this session, attendees will understand the features and capabilities of scanning technologies and how they capture and process images of firearms and ballistic evidence with both precision and accuracy. This session will cover instrument methodologies, limitations of 3D data, and best practices for implementation. Participants will explore the application of control charts as a powerful tool for monitoring and maintaining the quality of imaging processes over time. The topics addressed will help ensure that the data generated are accurate and suitable for toolmark analysis.

August 28, 2024
2:00 – 3:30PM ET

**Session 2: Validation Standards and Technical Working Group
for 3D Toolmark Technologies (TWG3D2T)**

Todd Weller, Weller Forensics
Rachael Gominsky, Federal Bureau of Investigation

Session Overview: This presentation will provide an overview of validation, focusing on systems designed to measure and compare microscopic toolmarks on fired ammunition (e.g., bullets and cartridge cases). Rather than offering a protocol or step-by-step guide, the talk will instead address practical considerations and metrics to consider for validation. The goal is to make the concept of validation more approachable and less intimidating for participants. Attendees will also be introduced to the latest standards from the Organization of Scientific Area Committees (OSAC) and relevant documents from the Technical Working Group for 3D Toolmark Technologies (TWG3D2T).



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September 4, 2024 **Session 3: Casework Efficiency, LIMS Integration, and Workflow Configurations**
2:00 – 3:30PM ET

Carey M Alvarez Bacha, Unified Forensic Laboratory
Erich D. Smith, Federal Bureau of Investigation

Session Overview: The Cadre Forensics TopMatch-3D High-Capacity Scanner captures high resolution three-dimensional scans of fired cartridge cases and test fired cartridge cases. This presentation will cover the Unified Forensic Laboratory’s validation of the Cadre Forensics TopMatch-3D High-Capacity Scanner and NIBIN triaging algorithm. This discussion will focus on their use in evaluating and classifying fired cartridge cases and test fired cartridge cases for entry into National Integrated Ballistic Information Network (NIBIN). Additionally, the presentation will explore the practical integration of the Cadre Forensic TopMatch-3D High-Capacity Scanner and NIBIN triaging algorithm for use in NIBIN casework, highlighting best practices, challenges, and solutions.

September 11, 2024 **Session 4: Testimony and Admissibility**
2:00 – 3:30PM ET

Raymond Valerio, Queens County District Attorney’s Office
Erich D. Smith, Federal Bureau of Investigation

Session Overview: TBD



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