WORKSHOP: APPLICATION AND IMPLEMENTATION OF 3D TECHNOLOGY, ALGORITHMS, AND STATISTICS FOR FORENSIC FIREARM AND TOOLMARK ANALYSIS

9:00 AM – 4:00 PM | November 15, 2022

Hosts: Xiaoyu Zheng, Thomas Renegar, Michael Stocker, Johannes Soons, Steven Lund, and John Song

Description:
This workshop aims to provide forensic practitioners, laboratory managers, legal personnel, and researchers with knowledge of emerging tools and technologies for forensic firearm and toolmark analysis. Training topics include the theory behind different styles of microscopes for measuring three-dimensional (3D) toolmark topography, measurement quality assurance, data processing methods, quantitative toolmark similarity metrics, statistical frameworks for estimating the strength of the evidence, and virtual comparison microscopy. Participants will learn about the advantages and current limitations of these emerging technologies, and about strategies for their implementation in casework.

Agenda:

Time	Title	Speaker
9:00 - 9:30 am	Introduction to NIST and the Firearm Toolmark Analysis Project	Xiaoyu Alan Zheng
9:30 – 10:00 am	3D Instrument Measurement Principles	Thomas Renegar
10:00 – 10:45 am	Measurement Quality Assurance	Michael Stocker
10:45 – 11:00 am	BREAK	
11:00 – 12:00 pm	Computer Aided Firearm and Toolmark Analysis	Johannes Soons
12:00 – 1:00 pm	LUNCH BREAK	
1:00 – 1:30 pm	Statistical Framework	Steven Lund
1:30 – 3:30 pm	Automatic and Objective Firearm Identification and Report of Error Rate	John Song
3:30 – 4:00 pm	Panel Discussion with Speakers	