National Institute of Justice

Forensic Science Research and Development Symposium

American Academy of Forensic Sciences 77th Annual Scientific Conference

The National Institute of Justice (NIJ) Forensic Science Research and Development (R&D) Symposium is an open meeting delivered through NIJ's Forensic Technology Center of Excellence (FTCOE) where attendees can learn about NIJ-funded research across a variety of forensic science areas. You can register to attend the Symposium in person or virtually; however, American Academy of Forensic Sciences (AAFS) conference registration is not necessary to attend. Feel free to stop by to listen to specific presentations and view posters or stay all day and learn about the diverse NIJ forensic science R&D portfolio.

More details and registration information can be found here: https://forensiccoe.org/event-2025-research-development-symposium/

Agenda – Tuesday, February 18, 2025

The podium presentations will take place from 8:30 a.m. EST to 5:00 p.m. EST at the Baltimore Convention Center. A Q&A session for each presenter will directly follow their presentation. Please note that all times are listed in Eastern Standard Time (EST).

Start Time (EST)	End Time (EST)	Session Title
8:30 a.m.	8:40 a.m.	Welcome and Opening Remarks *Lucas Zarwell, Office of Investigative and Forensic Sciences, National Institute of Justice*
Session I—Trace Evidence/Fire Investigation/Physics and Pattern *Moderated by NIJ Program Manager Gregory Dutton*		
8:40 a.m.	9:05 a.m.	Assessment of the Added Value of New Quantitative Methodologies for the Analysis of Surface Soils in Forensic Soil Comparisons *Kelly Meiklejohn, North Carolina State University*
9:05 a.m.	9:30 a.m.	The Influence of Soils and Chlorinated and Non-Chlorinated Agitated Water on Surface-Enhanced Raman Spectroscopic Analysis of Artificial Dyes on Hair *Dmitry Kurouski, Texas A&M University*
9:30 a.m.	9:55 a.m.	Experimental Study of Heat Transfer and Fire Damage Patterns on Walls for Fire Model Validation *Matthew DiDomizio, Underwriters Laboratories*
9:55 a.m.	10:20 a.m.	Evaluation of the Occurrence and Associative Value of Non-Identifiable Fingermarks on Unfired Ammunition in Handguns for Evidence Supporting Proof of Criminal Possession, Use, and Intent *David Stoney, Stoney Forensic, Inc.*
10:20 a.m.	10:35 a.m.	BREAK

Start Time (EST)	End Time (EST)	Session Title
Session II—Forensic Anthropology and Forensic Pathology		
Moderated by NIJ Program Manager Rachel Wendt		
10:35 a.m.	11:00 a.m.	Optimizing Bruise Detection in Forensic Imaging: A Comparative Analysis of Object Detection Models *Katherine Scafide, George Mason University*
11:00 a.m.	11:25 a.m.	Using Artificial Intelligence: Deep Learning for Human Decomposition Staging *Audris Mockus, University of Tennessee*
11:25 a.m.	11:50 a.m.	Deep Learning Empowers Fine-Grained Population Affinity Estimation with Craniometric Data *Xiaoming Liu, University of South Florida*
11:50 a.m.	12:15 p.m.	Is Decedent Residual Odor Detectable by Human Remains Detection (HRD) Canines and Analytical Chemistry? *Dawnie Steadman, University of Tennessee*
12:15 p.m.	1:25 p.m.	LUNCH BREAK – On Your Own
Session III—Seized Drugs and Toxicology		
Moderated by NIJ Program Manager Megan Chambers		
1:25 p.m.	1:50 p.m.	Identifying High-Quality Aptamers for Drug Detection *Alexandra Bryant, North Carolina State University*
1:50 p.m.	2:15 p.m.	Caught Green-Handed: The Detection of Potential Cannabis-Use Biomarkers in Fingerprint Residues Using Mass Spectrometry *Rabi A. Musah, University at Albany, State University of New York*
2:15 p.m.	2:40 p.m.	Chromatographic Interferences That Can Inflate the Levels of Δ9-THC in Cannabis Samples *Walter B. Wilson, National Institute of Standards and Technology*
2:40 p.m.	3:05 p.m.	Evaluation of a Quantitative Analysis Method for Tetrahydrocannabinol Isomers in Biological Matrices *Rebecca Wagner, Virginia Department of Forensic Science*
3:05 p.m.	3:20 p.m.	BREAK
Session IV—Forensic Biology/DNA		
Moderated by NIJ Program Manager Tiffany Layne		
3:20 p.m.	3:45 p.m.	Trace DNA in Activity-Level Propositions *Ashley Hall, University of California, Davis*
3:45 p.m.	4:10 p.m.	A Comparison of Small-Amplicon Mitogenome Enrichment Methods for Massively Parallel Sequencing of Low- and High-Quality Sample Types *Courtney Cavagnino, Armed Forces DNA Identification Laboratory*
4:10 p.m.	4:35 p.m.	Fragmentomics of Hair DNA *Samuel Sacco, University of California, Santa Cruz*
4:35 p.m.	5:00 p.m.	Adaptive Sampling for the Simultaneous Analysis of STRs, SNPs, and mtDNA in Human Remains Identification *Katherine E. McBroom-Henson, University of North Texas Health Science Center at Fort Worth*

Adjourn

Poster Session

The poster presentations will be from 5:00 p.m. EST to 6:30 p.m. EST. Self-guided tours will begin at 12:00 p.m. EST, and the poster room doors will remain open until 7:00 p.m. EST.

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More Information Coming Soon!