ENGINEERING & APPLIED SCIENCES

Thursday

Poster Session

11:30 am—1:00 pm	**D1**	**A Study on the Application of a Thermal Mannequin for Estimating a Hypothermia Environment** Chan-seong Park, PhD*; Kyeongmin Lee, MS
11:30 am—1:00 pm	**D2**	**An investigation of the Interactions of Touch DNA With Metal Surfaces Using X-Ray Photoelectron Spectroscopy** Caitlyn Amos, MSc*; Herve Menard, PhD; Alexander Gray, PhD; Niamh Nic Daeid, PhD; Federico Grillo, PhD
11:30 am—1:00 pm	**D3**	**Clustering and Multidimensional Scaling of Hybrid Match Factors for Illicit Drug Mass Spectra** Melinda A. Kleczynski, PhD; Arun S. Moorthy, PhD; Anthony J. Kearsley, PhD*
11:30 am—1:00 pm	**D4**	**A Study on an Analysis Methodology for Crowd Crush Accidents** Kyeongmin Lee, MS*; Chan-seong Park, PhD

Forensic Analysis and Considerations

Moderator: Kurt Weiss, MS — Co-Moderator: Darren Franck, MSME

8:20 am – 8:40 am	**D5**	**From Space to Asphalt: Sampling Protocols and Chain of Custody in Road Paving Fraud Investigations in Northeastern Brazil** Jose Alysson Dehon Moraes Medeiros*; Thiago Mendonca Muniz Albuquerque, DSc; Sidney Barbosa, MSc; Bruno S. Salgado, MSc
8:40 am – 9:00 am	**D6**	**An Experimental Evaluation of Hard Hat Performance for Head Impacts Above ANSI Design Standards** Jack Seifert, PhD*; Wade Baker, MSc
9:00 am – 10:00 am	**D7**	**Privacy (Legal and Technical) and Forensic Applications: Part 1** Jeffrey N. Holmes, JD*
10:00 am – 10:10 am		**BREAK**

Moderator: Michelle Hoffman, MS — Co-Moderator: Harold Franck, MSEE

10:10 am – 10:55 am	**D8**	**Privacy (Legal and Technical) and Forensic Applications: Part 2** Jeffrey N. Holmes, JD*
10:55 am – 11:15 am	**D9**	**Component-Level Narrow Object Impact Testing** Chris Clarke, BSME*; Brian Herbst, BSME
11:15 am – 11:30 am	**D10**	**Internal Combustion Engine (ICE) Automobile Fires** David Pienkowski, PhD*
11:30 am—1:00 pm		**BREAK**

*Presenting Author

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Vehicle Forensic Investigations

Moderator: David Pienkowski, PhD — Co-Moderator: Kurt Weiss, MS

1:00 pm – 1:20 pm	**D11**	**Vehicle Structure Design for Offset Frontal Collisions** Chris Clarke, BSME*; Brian Herbst, BSME
1:20 pm – 1:40 pm	**D12**	**A Fork Lift Incident: The Cause of Injury to the Driver** Harold E. Franck, MSEE*; Darren H. Franck, MSME
1:40 pm – 2:10 pm	**D13**	**Fault Tree Analysis and Forensic Testing of a Fatal Bedrail Entrapment Asphyxiation: The Importance of Eliminating User-Removable Safety Features** Mark R. Cannon, MEng, PE*; Michelle R. Hoffman, MS

Multidisciplinary Session: Criminalistics, Digital & Multimedia Sciences, Engineering & Applied Sciences, Psychiatry & Behavioral Science, and Toxicology

To Boldly Go: Navigating New Frontiers at the Intersection of AI and Forensic Science—Part I

Moderator: Jason Lewis, PhD — Co-Moderator: Ann Geisendorfer, JD

1:00 pm – 1:20 pm	**C21**	**Benchmarking AI Detectors on Altered Images: What Works, What Doesn't, and What We're Still Learning** Stephanie Reinders, PhD*; Gautham Venkatasubramanian, MSc
1:20 pm – 1:40 pm	**C22**	**The Role of Artificial Intelligence-Based Machine Learning Algorithms in Automated Forensic Facial Approximation: A Scientific Stride** Jagmahender Singh Singh Sehrawat, PhD*
1:40 pm – 2:00 pm	**C23**	**Tracing Meaning Across the Universe: A Forensic Semiotic Evaluation of Context Loss and AI Overinterpretation** Ivan Jerković, PhD*; Željana Bašić, PhD
2:00 pm – 2:20 pm	**B124**	**A Quick Differentiation of Similar Paint Colors Using a Palm-Sized Spectrometry Device for Field and Lab Applications: An Emerging Technology Via Machine Learning for an AI Direction** John Z. Wang, PhD*; Long Bing, PhD
2:20 pm – 2:40 pm	**B125**	**AI-Assisted Rare Sperm Cell Identification for Direct Single Cell aSTR Analysis From Late-Reported Post-Coital Samples** Morgan S. Peters-Grim, PhD*; Erik Baumann, BS; DeAna Dziak-Paustian, PhD; Jack Ballantyne, PhD; Erin Hanson, PhD
2:40 pm – 2:50 pm		**BREAK**

ENGINEERING & APPLIED SCIENCES

To Boldly Go: Navigating New Frontiers at the Intersection of AI and Forensic Science—Part II

Moderator: David Notowitz, BS

Co-Moderator: E. Allyn Smith, PhD

2:50 pm – 3:10 pm	**L52**	**Retro-BAC: An R Shiny Application for Retrograde Extrapolation Alcohol Calculation With AI Chatbot** Carlos Espinoza Cruz, PharmD*
3:10 pm – 3:30 pm	**L53**	**Using Machine Learning to Estimate How Designer Benzodiazepines Behave—From Structure Alone** Joel R. Fry, MS*; Dominica Peri, MS; Yomna Elgamal, MS; Guillermo Garza, MS; Marisol Castaneto, PhD; Anthony Rios, PhD; Min Wang, PhD
3:30 pm – 4:00 pm	**D14**	**Artificially Generated Handwriting in Forensic Comparisons** Gautham Venkatasubramanian, MSc*; Alicia L. Carriquiry, PhD
4:00 pm – 5:00 pm	**J13**	**Artificial Intelligence-Associated Psychosis: Clinical and Forensic Implications of Emerging Human–AI Interactions** Amanda Grace Hecker, MD*; Christopher Sterwald, MD; Rebecca Stenersen, MD; Jason Banarsee, MD; Luan Garcia, MD

Friday

Poster Session

11:30 am – 1:00 pm	**D15**	**An Evaluation of the Accuracy and Suitability of 3D Modeling Techniques in Documenting Vehicle Damage for Traffic Accident Reconstruction** Bartosz Klepczyński, PhD*; Kamil Świderski, MSc
11:30 am – 1:00 pm	**D16**	**Gunshot Residue (GSR) Analysis by Structural, Morphological, and Elemental Investigation for Extensive Authenticated Forensic Data: A Review** Rajender Singh, PhD*
11:30 am – 1:00 pm	**D17**	**Topological Data Analysis of Hybrid Match Factors of Illicit Drugs** Melinda A. Kleczynski, PhD*; Anthony J. Kearsley, PhD