

Wednesday

Poster Session

- 11:30 a.m. – 1:00 p.m. **D1** **The Characterization of Disperse Dyes in Polyester Fibers Via Direct Analysis in Real Time (DART®) Ionization Mass Spectrometry**
Zoe Millbern, BS; Nelson R. Vinueza, PhD*
- D2** **Portable Dynamic Vapor Microextraction (P-DVME) for Forensic and Environmental Field Studies**
Adam Friss, PhD; Adam Broerman, BS; Megan Harries, PhD; Tara Lovestead, PhD*
- D3** **The Use of Atmospheric Pressure Ionization (APPI) Coupled With Mass Spectrometry (MS) to Increase Sensitivity for the Identification of Disperse Dyes in Trace Evidence**
Morgan Demmler, MS; Nelson R. Vinueza, PhD*
- D4** **An Analysis of Polymer Composition and Dye of Textile Fibers by Direct Analysis in Real Time-Mass Spectrometry (DART®-MS) and Raman Microscopy**
Miquellie B. Bonner; Ngee Sing Chong, PhD; Mengliang Zhang, PhD*
- D5** **A Comparison of Weathering Profiles of Ignitable Liquids (ILs) by Gas Chromatography/Mass Spectrometry (GC/MS) and Direct Analysis in Real-Time Mass Spectrometry (DART®-MS)**
Shruthi Perna, MS; Ngee Sing Chong, PhD, Mengliang Zhang, PhD*

Thursday

Linguistics

Moderator:

Cristina Aggazzottii, PhD
Institute for Linguistic Evidence
Meridian, ID

Co-Moderator:

Awni Etaywe
University of New South Wales
Sydney, New South Wales, Australia

- 8:30 a.m. – 8:50 a.m. **D6** **Validation Testing of a Syntactic Authorship Identification Method Using Ground Truth Data From 20 Authors**
*Mariam Dar, PhD**
- 8:50 a.m. – 9:05 a.m. **D7** **Examining Conceptual Burstiness and Its Discursive Purpose in Violent Extremism Cases**
*Awni S. Etaywe**
- 9:05 a.m. – 9:25 a.m. **D8** **Validation Testing for Authorship Identification Outside and Inside Casework**
*Carole E. Chaski, PhD**
- 9:25 a.m. – 9:40 a.m. **BREAK**

- 9:40 a.m. - 10:00 a.m. **D9** **Algorithmic Fairness: Sampling and Algorithmic Bias Correction in Machine Learning With Applications to Forensic Evidence**
*Ganesh Krishnan, PhD**; *Heike Hofmann, PhD*
- 10:00 a.m. – 10:15 a.m. **D10** **Validation Testing of the SynAID Method for Authorship Identification Using Ground Truth Data From Four Non-Native English Authors**
*Ángela Almela, PhD**; *Pascual Cantos Gómez, PhD*
- 10:15 a.m. – 10:30 a.m. **D11** **A Comparison of Two Computational Approaches to Analyzing Last Words**
*Cristina Aggazzotti, PhD**
- 10:30 a.m. – 10:50 a.m. **D12** **The Lineup Technique for Forensic Author Identification**
*Carole E. Chaski, PhD**
- 10:50 a.m. – 11:05 a.m. **D13** **A Comparison of Authorship Identification Methods Using Ground Truth Data From Four Non-Native English Authors**
*Pascual Cantos Gómez, PhD**; *Angela Almela, PhD*
- 11:05 a.m. – 11:20 p.m. **D14** **A Quantitative Comparison of Last Words to Related Text Genres**
*Cristina Aggazzotti, PhD**
- 11:30 a.m. – 12:50 p.m. **BREAK**

Poster Session

- 11:30 a.m. - 1:00 p.m. **D15** **Critical Flow Behavior in Forensic Engineering Accidents**
*Chan-Seong Park, PhD**; *Kwnag-Soo Choi, MSe*; *Hong-Pil Jeon, MSe*; *Seung-Ho Chae, MSe*
- D16** **A Visualization of Overlapping Fingerprints by Hyperspectral Imaging in the Visible Region**
*Norimitsu Akiba, PhD**; *Atsushi Nakamura, PhD*; *Takayuki Sota, PhD*; *Kazuhito Hibino*; *Hidetoshi Kakuda, PhD*; *Kazunari Shibasaki, MSc*; *Ken'ichi Tsuchiya, PhD*; *Kosuke Tanabe, MSc*
- D17** **A Semi-Permeable Membrane Device for Canine Explosive-Detection: A Rate of Evaporation Study**
*Madison Reavis, BS**; *John Goodpaster, PhD*
- D18** **Noble Metal-Decorated Silica Monoliths for Forensic Analysis of Drugs and Pesticides Using Mass Spectrometry (MS)**
*Entesar Al-Hetlani, PhD**; *Mariam Ismail, MSc*; *Mohamed Amin, MSc*
- D19** **Automation In Forensic Science: The Future Ahead**
*Rattandeep Kaur, MSc**; *Surya Kant Tripathi, PhD*

Vehicle Forensics/Collision Analysis

Moderator:

Harold Franck, MSEE
Advanced Engineering Associates, Inc.
St. Petersburg, FL

Co-Moderator:

Darren Frank, MSME
Advanced Engineering & Associates, Inc.
Charleston, WV

- 12:50 p.m. - 1:10 p.m. **D20** **Physical Evidence Demonstrating Poor Maintenance in the Cause of an Axle Fracture and a Rollover Crash With Injuries**
Kurt Weiss, MSME; Mark Pozzi, MS; David Bosch, PhD*
- 1:10 p.m. - 1:25 p.m. **D21** **The Mechanics of All-Terrain Vehicle (ATV) Rollovers**
*David Pienkowski, PhD**
- 1:25 p.m. - 1:40 p.m. **D22** **Runaway Mustang**
Michael Rosenfield, BS; Robert Anderson, MS*
- 1:40 p.m. - 2:00 p.m. **D23** **Recreation Vehicle (RV) Crashworthiness: Enhanced Injury Caused by Unsafe Vehicle Interior Structures Combined With Predictable Seat and Belt Failures**
Mark Pozzi, MS; Vijay Gupta, PhD; Jack Bish, PhD*
- 2:00 p.m. - 2:15 p.m. **BREAK**
- 2:15 p.m. - 2:35 p.m. **D24** **Heavy Truck Fuel Tank Protection in Frontal Impacts**
Brian Herbst, BS; Steven E. Meyer, PE; Jack Bish; Lauren Bell, BS; Christopher Clarke, BS; Chuck Rogers*
- 2:35 p.m. - 2:55 p.m. **D25** **Unintended Recliner Connecting Rod Actuation in Rear Impacts: A Forensic Analysis**
Steve E. Meyer, PE; Brian R. Herbst, PE; Jeremy McMillin; Arin Nelson; Davis Hock; Jack Bish, PhD*
- 2:55 p.m. - 3:10 p.m. **D26** **Event Data Recorder (EDR) Data and Forensic Video Analysis Defends Municipality in Civil Rights Lawsuit After Officer Forcefully Subdues Fleeing Driving Under the Influence (DUI) Suspect**
Kurt Weiss, MSME; Parris Ward, JD*
- 3:10 p.m. - 3:25 p.m. **D27** **A Method for the Evaluation of Recreational Off-Highway Vehicle (ROV) Rollover Protective Structures (ROPS)**
Brian Herbst, BS; Christopher Clarke, BS*
- 3:25 p.m. - 3:40 p.m. **D28** **A Comparison of Restraint Load Marks for Retained vs. Ejected Occupants in a Fatal Rollover Crash**
*David Porta, PhD**
- 3:40 p.m. - 4:00 p.m. **D29** **Criminal Engineering: The Ugly 50-Year History of Federal Motor Vehicle Safety Standard (FMVSS) 207 and Proposals for an Upgraded Safety Standard That Will Prevent Catastrophic Injury and Death**
Mark Pozzi, MS; Kenneth Saczalski, PhD; Rachel Pozzi, MS*

Friday

Biomechanics/Ballistics

Moderator:

Kurt D. Weiss, MS
Case Study Collision Science, LLC
Santa Barbara, CA

Co-Moderator:

Mark C. Pozzi, MS
Sandia Safety Sciences
Edgewood, NM

- 8:30 a.m. – 8:55 a.m. **D30** **Failure of Suture Materials Used for a Caesarean Section**
*Sarah V. Hainsworth, PhD**
- 8:55 a.m. – 9:15 a.m. **D31** **Fatal Compression of the Torso Due to the Sudden Trapping of a Saree in the Rotator of a Pulse Mill: An Unusual Incidence During the Performance of a Harmless Activity With a Careless Attitude**
*Nilesh Tumram, MD**
- 9:15 a.m. – 9:30 a.m. **D32** **The Biomechanics of Strangulation: Should Limits Be Placed on Restraint Tactics?**
Harold Franck, MSEE; Darren Franck, MSME*
- 9:30 a.m. – 9:45 a.m. **D33** **The Fatal Explosion of a Rubber Plug**
Helmut Brosz, BAsC; Renee Knight, BSc*
- 9:45 a.m. - 10:05 a.m. **D34** **An Exotic Treatment for Chronic Paralysis by Kerosene Oil Ingestion: An Unusual Fatality by a Bizarre Form of Self Medication**
*Nilesh Tumram, MD**
- 10:05 a.m. – 10:20 a.m. **D35** **The Determination of Lumbar Disc Injury Potential From a Chair Collapse Incident**
Michelle Hoffman, MS; Robert Anderson, MS*
- 10:20 a.m. – 10:35 a.m. **BREAK**
- 10:35 a.m. – 11:05 a.m. **D36** **Technicalities of the Shotgun, Its Ammunition, and the Forensic Implications**
*John Nixon, MBA**
- 10:50 a.m. – 11:05 a.m. **D37** **A Visualization of Organic Gunshot Residues With Hyperspectral Imaging (HSI) and Correlation Analysis**
Kazunari Shibasaki, MSc; Norimitsu Akiba, PhD; Hidetoshi Kakuda, PhD; Kosuke Tanabe, MSc*
- 11:05 a.m. – 11:20 p.m. **D38** **An Accessible Open-Source Implementation of the Congruent Matching Cells Algorithms for Cartridge Case Analysis**
Joseph Zemmels, MSc; Susan VanderPlas, PhD; Heike Hofmann, PhD*
- 11:20 a.m. – 1:10 p.m. **BREAK**

Poster Session

- 11:30 a.m. - 1:00 p.m. **D39** **A Multifaceted Method for Evaluating the Driving Ability of Elderly Drivers: Toward Identifying Causes of Accidents Involving Elderly Drivers and Broadening the Recognition of Negligence Types**
Syunsuke Tsuchiya, BE; Yasumi Ito, PhD; Kazuki Kamiunten, BE; Qin Xu, MA; Ryuichi Yamada, PhD; Yoshiyuki Kagiya, PhD; Yuji Tanaka, PhD; Kei Sato, PhD*
- D40** **A Study of Injury Risk Assessment Methods for Pediatric Impacts With the Floor: An Estimation of Acceleration and Load the Human Body Is Subjected to Using Multi-Body Dynamics**
Yuki Kunugi, BE; Ito Yasumi, PhD; Sonoka Okura, BE; Taiki Watanabe; Ryuichi Yamada, PhD; Yamanashi Kagiya, PhD; Toshiyuki Harama, BE; Kosuke Kurata, MS; Takao Ogura; Tetsuya Nemoto, PhD*
- D41** **The Forensic Approach in the Analysis of Trauma: The Application of 3D Technology in the Reconstruction of Death**
Isabella Aquila, MD, PhD; Roberto Raffaele, MD; Matteo Antonio Sacco, MD; Pietrantonio Ricci, MD, PhD*
- D42** **Macro Photography in Forensic Pathology: A Useful Tool to Focus on Skin Lesions**
Federico Manetti, MD; Matteo Scopetti, MD; Vittorio Gatto, MD; Martina Padovano, MD; Alessandro Santurro, MD; Vittorio Fineschi, MD. PhD*

The Grand Finale

Moderator:

Michelle R. Hoffman, MS
Forensic Injury Analysis, LLC
Tempe, AZ

Co-Moderator:

David Pienkowski, PhD
University of Kentucky
Lexington, KY

- 1:10 p.m. – 1:25 p.m. **D43** **The Challenges in Reproducible Capture and Analysis of Cannabinoids With an Impaction Filter Device**
Kavita Jeerage, PhD; Tara Lovestead, PhD; Veruska Malave, PhD; Adam Friss, PhD; Cheryle Beuning, PhD; Cinnamon Bidwell, PhD; Edward Garboczi, PhD*
- 1:25 p.m. – 1:40 p.m. **D44** **A Forensic Analysis of Cosmetic Smudges Using Mass Spectrometry: The Effect of Sampling, Surface, and Time**
Entesar Al-Hetlani, PhD; Halemah AlSaeed, MSc; Mohamed Amin, MSc*
- 1:40 p.m. – 1:55 p.m. **D45** **Fluorescence Lifetime Imaging (FLIM) of Latent Fingerprints on Paper Emitting Strong Fluorescence at Excitation by 532 Nanometers (Nm) Pulsed Laser**
Hidetoshi Kakuda, PhD; Norimitsu Akib, PhD; Kazuhito Hibino; Kazunari Shibasaki, MSc; Ken'ichi Tsuchiya, PhD; Kosuke Tanabe, MSc*
- 1:55 p.m. – 2:10 p.m. **D46** **A Simulation Triad for Evaluating the Use of Engineering Simulation**
*Bart Kemper, BSME**
- 2:10 p.m. – 2:25 p.m. **D47** **A Forensic Readiness Model for the Fused Filament Fabrication (FFF) -Based Additive Manufacturing (AM) Process**
Muhammad Rais, MS; Irfan Ahmed, PhD*
- 2:25 p.m. – 2:40 p.m. **BREAK**

- 2:40 p.m. – 3:00 p.m. **D48** **Microscopy—Criminalistics and Environmental Forensic Applications**
*James Millette, PhD**
- 3:00 p.m. - 3:20 p.m. **D49** **Who Is a Good Boy? Finding Out What Makes a Performance Detection Dog**
Clément Martin, MS; François Verheggen; Claire Diederich*
- 3:20 p.m. - 3:40 p.m. **D50** **An Evaluation of the Application of Data Fusion Technology to Sand Analysis**
*Sergey Mamedov, PhD**