

ENGINEERING & APPLIED SCIENCES

Thursday

Poster Session

11:30 am – 1:00 pm	D1	WITHDRAWN
11:30 am – 1:00 pm	D2	Active Air Sampling and Quantitation of Methyl Methacrylate During Controlled Pyrolysis of Poly(Methyl Methacrylate) <i>Kaylee Morton, MSFS*; Mahsa Lotfi Marchoubeh, PhD</i>
11:30 am – 1:00 pm	D3	An Examination and Analysis of False Negative in Presumptive Blood Testing Methods on Leather <i>Sarahy Magdaleno, MSFS*</i>

Thursday—Session I

Sample Analysis and Forensic Detection

Moderator: Kurt Weiss, MS

Co-Moderator: Darren Franck, MSME

8:00 am – 8:20 am	D4	Failure Analysis of Ink Samples Using Multiple Modes of Pyrolysis-Gas Chromatography/ Mass Spectrometry (Py-GC/MS) <i>Athena Nguyen, BS*</i>
8:20 am – 8:50 am	D5	Light It Up! Photoluminescent Lead Detection for Forensic Investigations <i>Kendra Adelberg, MS*; Arno van der Weijden, PhD; Lukas Helmbrecht, PhD; Arian van Asten, PhD; Wim Noorduin, PhD</i>
8:50 am – 9:20 am	D6	Seeing the Invisible: Flow Visualization and Scientific Imaging Techniques to Support Safety, Security, and Forensics <i>Matthew Staymates, MS*; Edward Sisco, PhD</i>
9:20 am – 9:40 am	D7	Odorant Depletion in Propane Containers <i>Tim Dunn, MS*</i>
9:40 am – 9:55 am		BREAK
9:55 am – 10:15 am	D8	Synthetic Routes for the Production of Xylazine: An Analysis of Clandestine Viability <i>Calvin Keller, PhD*</i>
10:15 am – 10:45 am	D9	WITHDRAWN
10:45 am – 11:15 am	D10	An Economic Valuation of Environmental Damages Caused by Illegal Artisanal Mining in the Brazilian Yanomami Indigenous Territory <i>David Pavanelli, PhD*; Uilian Mello, MS; Rai Cunha, BS; Rommel Pereira, BA; Erich Lima; Mauro Magliano, PhD</i>
11:15 am – 1:00 pm		BREAK

ENGINEERING & APPLIED SCIENCES

Collision/Forensic Analysis

Moderator: David Pienkowski, PhD

Co-Moderator Harold Franck, MSEE

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| 1:00 pm – 1:30 pm | D12 | A Race Car Accident Analysis
<i>Berislav Barisic-Jaman, MEng*</i> |
| 1:30 pm – 1:50 pm | D13 | A Forensic Analysis of Unintended Vehicle Rollaway Incidents
<i>Chris Clarke, BSME*; Brian Herbst, BSME*</i> |
| 1:50 pm – 2:10 pm | D14 | The Role of Early Assumptions in Driver Determination for an Unwitnessed Motor Vehicle Crash
<i>David Porta, PhD*</i> |
| 2:10 pm – 2:25 pm | | BREAK |
| 2:25 pm – 2:55 pm | D15 | Roof System Failure: Causes and Misconceptions
<i>Darren Franck, MSME*; Harold Franck, MSEE</i> |
| 2:55 pm – 3:40 pm | D16 | The Analysis of Vehicle Dynamics From Monitor Playback Recordings
<i>Michael Callahan, BSME*; Sean Snyder, BS*</i> |
| 3:40 pm – 4:10 pm | D17 | Forensic Mapping With a Real-Time Kinematics-Equipped Drone (UAS/UAV), With or Without Ground Control?
<i>David Sersen, BSEE*</i> |

Thursday—Session II

Multidisciplinary Session: Engineering & Applied Sciences and Forensic Nursing Science

Moderator: Valeria Kaegi, RN

Co-Moderator: Jessica Volz, DNP

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| 1:00 pm – 1:30 pm | D18 | Accidental or Deliberate? Can a Safety Razor Inflict Injuries to a Baby in a Bathtub?
<i>Sarah Hainsworth, PhD*</i> |
| 1:30 pm – 2:00 pm | E8 | Alternate Light Sources in Subclinical Bruising: A Systematic Review
<i>Maureen Canellas, MD*; Jennifer Edwards, MD</i> |
| 2:00 pm – 2:30 pm | D19 | An Analysis of Injuries and Injury Mechanisms of Male PMHS in High-Speed, Rear-Facing Frontal Impact Scenarios
<i>John Bolte, IV, PhD*; Amanda Agnew, PhD; Yun-Seok Kang, PhD</i> |
| 2:30 pm – 2:45 pm | | BREAK |
| 2:45 pm – 3:15 pm | E9 | Revolutionizing Forensic Nursing Education: The Impact of Virtual Reality, Artificial Intelligence, and Performance Data Analytics
<i>Jamie Ferrell, MBA, BSN, RN*; Sally Henin, MD</i> |
| 3:15 pm – 3:45 pm | D20 | Empirical Testing of a Trip-Fall Incident
<i>Darren Franck, MSME*; Harold Franck, MSEE</i> |
| 3:45 pm – 4:15 pm | D21 | A Windshield Fracture Incident: Injury-Producing Event or Just Cracked Glass?
<i>Michelle Hoffman, MS*; Kurt Weiss, MS</i> |

ENGINEERING & APPLIED SCIENCES

Friday

Poster Session

- 11:30 am – 1:00 pm **D22** **The Impact of Artificial Intelligence in Clinical Risk Management: A Focus on Fall Prevention**
*Paolo Visci, MD**; *Elena Graziano, MD*; *Michele Telegrafo, MD*; *Annachiara Vinci, MD*;
Fiorenza Zotti, MS; *Alessandro Dell’Erba, MD, PhD*; *Davide Ferorelli, MD*
- 11:30 am – 1:00 pm **D23** **The Role of Engineering in Forensic Science: Physics Applied in a Case of Hemorrhagic Shock From Central Venous Catheter Blood Loss**
*Gabriella Maisetta, MD**; *Federica Spina, MD**; *Ilaria Marcacci, MD**; *Julia Lazzari, MD*;
Giulia Berneschi, MD; *Luigi Papi, MD*; *Paolo Maremmani, MD*; *Fabio Giannelli, BSN*;
Alessandro Mariotti, PhD
- 11:30 am – 1:00 pm **D24** **The Use of Stationary Phases Designed for Supercritical Fluid Chromatography for the Reversed-Phase Liquid Chromatographic Separation of Nine Isomers of $\Delta 9$ -Tetrahydrocannabinol**
*Gunnar Franz, BS**; *Ira Lurie, PhD*; *Walter Wilson, PhD*
- 11:30 am – 1:00 pm **D25** **Augmented Reality Visualization for Postmortem Analysis of a Traffic Accident: Clarification of Injury Mechanism Through PMCT-Based Antemortem Posture Reconstruction**
*Haruki Fukuda, MD, PhD**; *Akira Hayakawa, MD, PhD*; *Hiroyuki Tokue, MD, PhD*;
Rie Sano, PhD; *Yoshihiko Kominato, MD, PhD*

Linguistics/Artificial Intelligence

Moderator: Carole Chaski, PhD

Co-Moderator: Nathan Holmes

- 8:00 am – 8:45 am **D26** **Environmental Signature Extraction for Forensic Analysis of Audio Recordings Using AI/LLM Models**
*Lucky Onyekwelu-Udoka, MS**; *Yong Guan, PhD*
- 8:45 am – 9:15 am **D27** **Quantitative Similarity Assessments of Forensic Images**
*Gautham Venkatasubramanian, MS**; *Alicia Carriquiry, PhD*
- 9:15 am – 9:35 am **D28** **Kumho, Engineering, and the Linguistics of Definitions**
*Jeffrey Holmes, JD**; *Carole Chaski, PhD*
- 9:35 am – 9:55 am **D29** **A Tool to Quickly Estimate Uncertainty of a Forensic Test**
*Alessandro Ferrero, MS**; *Veronica Scotti, JD*
- 9:55 am – 10:10 am **BREAK**
- 10:10 am – 10:30 am **D30** **Artificial Intelligence Tools Applied to Forensic Engineering Cases: Overcoming This Challenge Through an Academic Cooperation Program**
*Jose Medeiros, DSc**; *Thiago Albuquerque, MS*; *Sandro Torres, PhD*; *Lucidio Cabral, DSc*;
Marçal Lima Filho, PhD; *Gilberto Sousa Filho, DSc*; *Bruno Leitão, BEng*
- 10:30 am – 10:50 am **D31** **Falsely Accused: Generative AI and the Allegation of Academic Plagiarism**
*Carole Chaski, PhD**

ENGINEERING & APPLIED SCIENCES

- 10:50 am – 11:10 am **D32** **Weaknesses of Artificial Intelligence Proxies of Topic for Forensic Linguistic Applications**
*Elizabeth Smith, PhD**; *Cristina Aggazzotti, PhD*; *Nicholas Andrews, PhD*
- 11:10 am – 11:30 am **D33** **A Computational Method for Detecting Sophisticated Plagiarism**
*Carole Chaski, PhD**
- 11:30 am – 11:50 am **D34** **Analyzing Generative AI’s Truth-Bias in Deceit Detection: An Empirical Experiment in English and Spanish**
*Ángela Almela, PhD**