

# CRIMINALISTICS

## Wednesday

### Poster Session

11:30 am—1:00 pm	<b>B1</b>	<b>Advancing Forensic Analysis With Chemical Imaging Microspectroscopy</b> James Cizdziel, PhD*; Kendall Wontor, PhD
11:30 am—1:00 pm	<b>B2</b>	<b>An Expanded Uncertainty Assessment of GC/MS Chromatographic Peak Area and Retention Time</b> Emma Hardwick, BA*; J. Tyler Davidson, PhD
11:30 am—1:00 pm	<b>B3</b>	<b>The Application of HS/SPME-GC/MS for Hydraulic Fluid Compound Detection in Jet Fuels</b> Javier Hodges, BS*; Jorn Yu, PhD
11:30 am—1:00 pm	<b>B4</b>	<b>An Evidence-Based Method for Determining Cause of Death in a Double Homicide Involving Matricide and Patricide</b> Gennaro Baldino, MD, PhD*; Cataldo Raffino, MD; Giorgia Burrascano, MD*; Elvira Ventura Spagnolo, MD; Domenico Abramo, MD* Gabriele Rotter, MSc
11:30 am—1:00 pm	<b>B5</b>	<b>A Forensic Approach to Quantifying Environmental Tobacco Smoke Exposure in Hair: Method Development and Analysis of Cosmetic Treatment Effects</b> Tanique Z Jones, BSc; Somayeh Mohammadi, PhD; Hamidreza Sharifan, PhD*; Christopher J Trejo, BSc
11:30 am—1:00 pm	<b>B6</b>	<b>Close Non-Matches and Database Searches: Probability That a True Match Is Among the Top K Correlations After a Database Search</b> Blanca Parker, BA*; Alicia Carriquiry, PhD; Heike Hofmann, PhD
11:30 am—1:00 pm	<b>B7</b>	<b>Toward a New Forensic Tool: Elemental Profiling of Tire Rubber in Traffic Homicide Cases</b> John Lucchi, PhD*; James McAleer, BS; Matthieu Baudalet, PhD
11:30 am—1:00 pm	<b>B8</b>	<b>Washington DC Department of Forensic Sciences: A Strategic Approach to Optimizing Laboratory Operational Efficiency—DC DFS's Implementation of the Casework Administration Group</b> Krystyna Hopkinson, MScFS*
11:30 am—1:00 pm	<b>B9</b>	<b>Prints That Matter: Identifying the Most Productive Evidence Through Analytical Reporting</b> Angelica Rountree, BS*
11:30 am—1:00 pm	<b>B10</b>	<b>The Relationship Between the Ridge Patterning and the Frequency of Minutiae on the Interdigital Area of Palmprints</b> Angela Tonietto, MSc*; Patrick Buzzini, PhD
11:30 am—1:00 pm	<b>B11</b>	<b>Cracking the Fingerprint Clock: Age-Dating Latent Fingerprints Using Multivariate Chemical Degradation Models</b> James Nketsiah, MPhil*
11:30 am—1:00 pm	<b>B12</b>	<b>Fingerprints as Biomarkers of Cognitive and Emotional Development: A Forensic Anthropological Investigation</b> Jagmahender Singh Sehrawat, PhD*; Amisha Sharma, MSc
11:30 am—1:00 pm	<b>B13</b>	<b>Gender Classification From Fingerprints In the East Indian Population</b> Ms.Roshni Butt, PhD*

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11:30 am—1:00 pm	<b>B14</b>	<b>Hand Detail Image Comparisons: The State of the Discipline for an Emerging Forensic Methodology</b> Nicole Richetelli, PhD*; William Chapman, APM; Richard Vorder Bruegge, PhD; Jim Cole
11:30 am—1:00 pm	<b>B15</b>	<b>Reaping the Research: Patent Landscape Analysis of Latent Fingerprint Processing Techniques (1900–2024)</b> Jatin Kumar Sharma, MScFS*; Abhilasha, MS
11:30 am—1:00 pm	<b>B16</b>	<b>The Washing Away of Evidence: The Effect of Different Washing Treatments on Body Fluid Identification and DNA Profiling From Stained Clothing Fabrics</b> Francisco Medina-Paz, PhD; Maria Josefina Castagnola, MSc; Sara C. Zapico, PhD; abriela Roca, MD, PhD*; Vasilisa Yukhno
11:30 am—1:00 pm	<b>B17</b>	<b>The Differentiation of Cell Populations in Saliva-Skin Mixture Samples Using Cellular Autofluorescence Profiling</b> Kara Fairfax, BS*; Christopher Ehrhardt, PhD; Arianna DeCorte, MS
11:30 am—1:00 pm	<b>B18</b>	<b>WITHDRAWN</b>
11:30 am—1:00 pm	<b>B19</b>	<b>A New Spin on DNA Extraction: Validating SpermX GenSpin Differential Extraction for Sexual Assault Evidence Processing</b> Tori Tyree, BS*; Amy mcGuckian, MFS; Julie Sikorsky, MSc; Kelly Beatty, MSFS
11:30 am—1:00 pm	<b>B20</b>	<b>Cell-Free DNA From Clinical Sperm Samples</b> Xuxiang LI, MS*; Robin Cotton, PhD
11:30 am—1:00 pm	<b>B21</b>	<b>Differential Extraction: A Comparison of SpermX and I-Sep DL-MB to Determine Cell Separation Efficiency and Kit Sensitivity</b> Evan Wheeler, MS*; Rhonda Williams, PhD
11:30 am—1:00 pm	<b>B22</b>	<b>From Swabs to Sequencing: Integrating Y-Screening and NGS Into Sexual Assault Evidence Processing</b> Lyndsy Stacy, MS*; Joshua Boster, MS; Rachel Houston, PhD; Jennifer Snedeker, PhD
11:30 am—1:00 pm	<b>B23</b>	<b>DNA Sample Success Rates and Selecting the Most Impactful Evidence for DNA Testing</b> Julie Ferragut, BS*
11:30 am—1:00 pm	<b>B24</b>	<b>MixMaSTR: A Software Package for Designing and Interpreting Forensic DNA Validation Studies</b> Sarah Riman, PhD*; Hari Iyer, PhD; Peter Vallone, PhD; Sarra Chouder, MSc; Edgar Robitaille; Benjamin Long, BBA
11:30 am—1:00 pm	<b>B25</b>	<b>Validation of the ForenSeq Kintelligence Kit on the MiSeq FGx for Investigative Genetic Genealogy at Marshall University Forensic Science Center</b> Tara Knoblach, BS*; Emma Katzmann, CLS; Eric Miller, MS; Laura Kuyper, MS; Cassandra Taylor, MS; Chelsea Garza, PharmD

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## Thursday

### Poster Session

11:30 am—1:00 pm	<b>B26</b>	<b>A Quantitative Analysis of 12 Cannabinoids from Cannabis Samples Using UPLC-UV-MS</b> Fiza Tajdin, BS*; Britni Skillman, PhD; J. Tyler Davidson, PhD
11:30 am—1:00 pm	<b>B27</b>	<b>A Synergistic Approach for Tobacco Authentication Based on Machine Learning and ATR/FTIR Spectroscopy</b> Vishal Sharma, PhD*; Akanksha Sharma, MSc
11:30 am—1:00 pm	<b>B28</b>	<b>An Analysis of Fentanyl Analogs in Multi-Component Drug Mixtures Using Surface-Enhanced Raman Spectroscopy</b> Kristen Jerich, BSc*; Bruce McCord, PhD
11:30 am—1:00 pm	<b>B29</b>	<b>A Cannabis Flower Potency Analysis by Using Liquid Chromatography/Triple Quadrupole/Mass Spectrometry</b> Na Liu, PhD*; Liguang Song, PhD
11:30 am—1:00 pm	<b>B30</b>	<b>The Development of a Validation and Implementation Package for the Quantification of Several Drugs by LC/MS/MS</b> Meghan Appley, PhD*; Sarah Shuda, MS; Edward Sisco, PhD
11:30 am—1:00 pm	<b>B31</b>	<b>Drug Profiling in Marion County, Indiana, Using Advanced Statistical Methods and Chemometrics Based on Components Detected by Gas Chromatography/Mass Spectrometry</b> Natalie Holmes, BS*; Philip Brandyberry, MSFS; John Goodpaster, PhD
11:30 am—1:00 pm	<b>B32</b>	<b>Evaluating Extraction Techniques for Mushrooms in Chocolate to Avoid Potential 4-Acetoxy-N,N-Dimethyltryptamine Hydrolysis</b> Naria Ford-Thompson, MSFS*; Elizabeth Shields
11:30 am—1:00 pm	<b>B33</b>	<b>Investigating the Stability and Degradation of Psilocybin and Psilocin in Mushroom Gummies: Implications for Forensic Analysis</b> Alyssa Ricca, BS*; Marianne Staretz, PhD; Thomas Brettell, PhD; Mia Bercier, MSFS
11:30 am—1:00 pm	<b>B34</b>	<b>Microcrystalline Tests for the Detection of Novel Psychoactive Substances (NPS)</b> Grace Pavel*; Ruby Alley*; Kimiko Ferguson, PhD
11:30 am—1:00 pm	<b>B35</b>	<b>The Development and Validation of a Rapid Direct Analysis in Real Time-Triple Quadrupole/Mass Spectrometry (DART-QqQ/MS) Method for Screening Nitazene Analogs</b> Nicholas Khorozov, MS*; Alex Krotulski, PhD; Barry Logan, PhD; Joshua DeBord, PhD
11:30 am—1:00 pm	<b>B36</b>	<b>The Development of a GC/MS Method for the Simultaneous Separation of 21 Different Acidic and Neutral Cannabinoids</b> Amal Ali, MA*; Mostafa Elhendawy, PhD; Mohamed Radwan, PhD; Amira Wanas, PhD; Mahmoud ElSohly, PhD; Murrell Godfrey, PhD
11:30 am—1:00 pm	<b>B37</b>	<b>The Development of an Optimized Extraction Protocol for Cannabinoids From Cannabis Plant Material</b> Emma Fitzgibbons, MS*; Britni Skillman, PhD; J. Tyler Davidson, PhD
11:30 am—1:00 pm	<b>B38</b>	<b>The Identification of Methyl-Substituted Fentanyl Analogs Using Optimized Weighting Within the Inverted Library Search Algorithm (ILSA)</b> Christany Liggins, BS*; Alleigh Couch, BS; J. Tyler Davidson, PhD; Arun Moorthy, PhD

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11:30 am—1:00 pm	<b>B39</b>	<b>Under the Light: UV/Vis Spectrophotometry as a Tool for Characterizing Designer and Traditional Benzodiazepines in Varying Solvent Systems</b> Kailee Marchand, BS*; Cailin Herl, MScFS; Geraldine Monjardez, PhD; Alaina Anderson, MS; James Miller, MA; Mona Colca, BA
11:30 am—1:00 pm	<b>B40</b>	<b>Using Dry ATR/FTIR Spectroscopy to Identify 1,4-Butanediol in Alcoholic Beverages</b> Thomas Spudich, PhD*; Ethan Nugen; Christina Hayes, MNS; Marissa Purfeerst, BS
11:30 am—1:00 pm	<b>B41</b>	<b>A Headspace Analysis of Reference Grade and Seized Xylazine, 4-ANPP, and Nitazenes</b> Sadie Olrogg, BS*; Lauryn DeGreeff, PhD
11:30 am—1:00 pm	<b>B42</b>	<b>LC/MS and GC/MS Analyses of the Decomposition Products of Fentanyl Using Various Oxidative Processes</b> Mehdi Moini, PhD*; Edward Bentil, PhD; Brian Eckenrode, PhD
11:30 am—1:00 pm	<b>B43</b>	<b>Nitazene Analog Identification Using a Combination of Liquid Chromatography/Mass Spectrometry (LC/MS) and Gas Chromatography/Mass Spectrometry (GC/MS)</b> Audrey Pless, BS*; Oriana Ovide, MS; Kai Allen, BS
11:30 am—1:00 pm	<b>B44</b>	<b>Optimizing a Portable-Capillary Liquid Chromatograph With Diode Array Detection for Illicit Drug Analysis</b> Lauren Deem, BS*; Abigail Ladau, BS; Ira Lurie, PhD
11:30 am—1:00 pm	<b>B45</b>	<b>The Validation of an LC-PDA Method for the Quantitative Analysis of Cannabinoids in Homemade and Commercial Gummies</b> Ya-Chih (Jessica) Cheng, PhD*; Walter Wilson, PhD
11:30 am—1:00 pm	<b>B46</b>	<b>Addressing the Oxygen in the Room: A Novel Approach for the Identification of Nitazene Analogs by Oxygenated Species Using DART-MS</b> Emma Hardwick, BA*; Alleigh Couch, BS; J. Tyler Davidson, PhD
11:30 am—1:00 pm	<b>B47</b>	<b>Distinguishing Positional Isomers of Methylfentanyl</b> Jennifer Skuches, MS*; Brianna Singh, BS*
11:30 am—1:00 pm	<b>B48</b>	<b>Enhancing Canine Detection Through the International Commission on Detector Dogs (ICODD)</b> Kenneth Furton, PhD*; Kelvin Frank, PhD
11:30 am—1:00 pm	<b>B49</b>	<b>Illicit Cannabis Cultivation in California: Illegal Pesticides, False Packaging, and Risks to Human Health</b> Vidia Gokool, PhD*
11:30 am—1:00 pm	<b>B50</b>	<b>Quantifying Dosage Risk: Fentanyl Concentrations in Counterfeit Drugs From Border Seizures</b> Mia Borrelli, MSFS*; Amanda Mohr, MS; Barry Logan, PhD; Thom Browne, MA
11:30 am—1:00 pm	<b>B51</b>	<b>An Evaluation of Deactivations on Gas Chromatographic Stationary Phases for the Analysis of Seized Drugs of Abuse</b> Corby hilliard*; Jared Burkhart, BSc; Jamie York, PhD
11:30 am—1:00 pm	<b>B52</b>	<b>The Deal With Diluents: Fentanyl Test Strips and How Diluents Affect Their Limit of Detection</b> Kate Mongold, MS*; Heather Barkholtz, PhD; Meshel Lange, MS; Mason Shields, BS
11:30 am—1:00 pm	<b>B53</b>	<b>The Impact of Environmental Contaminants on the Accuracy of Bacterial-Signature-Based Identification of Human Saliva Samples</b> Briley Peacher, BS*; Baneshwar Singh, PhD

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11:30 am—1:00 pm	<b>B54</b>	<b>Improving Source Attribution of Kratom Products Through Novel DNA Barcode Markers</b> Jasmine Sierra, BS*; Cesar Cantu Jr., PhD; Rachel Houston, PhD; Kari Graham, PhD
11:30 am—1:00 pm	<b>B55</b>	<b>An Evaluation of OpiumPlex for Genetic Profiling of the Opium Poppy</b> Greta Hundtofte, BS*; Sara Willer, MS; Rachel Houston, PhD
11:30 am—1:00 pm	<b>B56</b>	<b>Analyzing the Effects of Time and Temperature on SNP Markers in Fingernails to Indicate Asian and African American Descent</b> Heather Coyle, PhD; Kelly Murphy, BS*
11:30 am—1:00 pm	<b>B57</b>	<b>Sub-Regional Biogeographic Inference for East Asian Populations Using 165 AISNPs and Machine Learning</b> Sohee Cho, PhD*; Sojung Lim, MD; Soong Deok Lee, MD, PhD
11:30 am—1:00 pm	<b>B58</b>	<b>The Genetic Evidence Trail: Investigating MicroRNA Markers and Their Connection to Body Mass Index</b> Daja Bonilla, BSFS*; J. Paul Brooks, PhD; Sarah Seashols-Williams, PhD; Tracey Dawson Green, PhD; Xiaomeng (Simone) Yang, MS
11:30 am—1:00 pm	<b>B59</b>	<b>That's Some Pig: Protocol Optimization for the Analysis of DNA in Unpulverized Cremated Remains</b> Kendall Kroha, MS*: Stephanie Gladych, PhD; Austin Wickham, MS
11:30 am—1:00 pm	<b>B60</b>	<b>Studying Human Decomposition Under Dry, Hot Desert Conditions: An Environmental Simulation Experiment</b> Ashley Kaufman, BS*; Sheree Hughes, PhD; Mayra Eduardoff, PhD
11:30 am—1:00 pm	<b>B61</b>	<b>The Umbilical Cord as a Novel DNA Sample for Comparison to Unidentified Human Remains</b> Adelee Conner, MFS*; Cory Lawton, MFS; David Orbin, MFS; Ashley Platt, MS; Stephanie Storino, MPS
11:30 am—1:00 pm	<b>B62</b>	<b>Infrared Insights: Using FTIR Spectroscopy to Predict DNA Viability in Burnt Bone Samples</b> Emily Jasek, BS*; Ahana Chatterjee, MS; Amy Mundorff, PhD; Geraldine Monjardez, PhD; Mayra Eduardoff, PhD; Armando Anzellini, PhD
11:30 am—1:00 pm	<b>B63</b>	<b>Direct STR Amplification of Human Hair Roots</b> Stephanie Betts, MS; Ivette Espinoza Quiroga, MS; Linda Otterstatter, BS; Joseph Donfack, PhD*

## Thursday—Session I

### Trace DNA and Activity-Level Evaluation

Moderator: Harmeet Kaur, PhD

Co-Moderator: Amber Smith, MSFS

8:00 am—8:15 am	<b>B64</b>	<b>The Fundamental Principles of Activity-Level Evaluation and Their Application to a DNA Case</b> Simone Gittelson, PhD*; Tim Kalafut, PhD; James Curran, PhD; John Buckleton, DSc
8:15 am—8:30 am	<b>B65</b>	<b>Activity-Level Evaluations of Realistic Crime Scene Scenarios</b> Ashley Hall, PhD*; Ray Wickenheiser, DPS*
8:30 am—8:45 am	<b>B66</b>	<b>An Enhanced Recovery Method to Improve DNA Profiling Success From Handled Bullet Casings</b> Andria Morgan-Capers, BS*; Susan Greenspoon, PhD; Christopher Ehrhardt, PhD; Stephanie Walcott, MScFS

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8:45 am—9:00 am	<b>B67</b>	<b>The SCAnDi Project: Single-Cell Analysis for DNA Identification</b> Iain Macaulay, PhD; Katherine Brown, PhD; George Zouganelis, PhD*; Lorna Dawson, PhD; Ardhenu Beheraa, PhD
9:00 am—9:15 am	<b>B68</b>	<b>Continued Optimization of a High-Resolution Melt-Based Mixture Screening Tool and Evaluation as a Contributor Identification Tool</b> Kiersten Fultz, BS*; Tracey Dawson Green, PhD; Chastyn Smith, PhD
9:15 am—9:30 am	<b>BREAK</b>	

## The Annie Le Homicide

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Moderator: Lynne Burley, MS

Co-Moderator: Dragan Primorac, MD, PhD

9:30 am—10:15 am	<b>B69</b>	<b>When the DNA Doesn't Match the Timeline: The Annie Le Homicide and the Forensic Challenges of Unexpected DNA in Unexpected Places</b> Eric Carita, MS*; Peter Valentin, PhD*
10:15 am—10:30 am	<b>BREAK</b>	

## Probabilistic Genotyping

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Moderator: Sylvia Etim

Co-Moderator: Catherine Navetta, BS

10:30 am—10:45 am	<b>B70</b>	<b>Lessons Learned in Implementing and Validating Probabilistic Genotyping</b> R. Austin Hicklin, PhD*; Nicole Richetelli, PhD*
10:45 am—11:00 am	<b>B71</b>	<b>Turning Unsearchable Mixtures Into Actionable Intelligence for Reliable DNA Evidence</b> Edward Schikel, MBA*; Terrance Lewis, MA; Mark Perlin, MD, PhD*; Matthew Legler, BS
11:00 am—11:15 am	<b>B72</b>	<b>Understanding and Reducing Variability in Complex DNA Mixture Interpretation: The Centre of Forensic Sciences Strategic Mixture Review</b> Kelly Bowie, MSc; Tanis Gornall, MS; Michael Bissonnette, MS*; Sonja Stadler, PhD; Melanie Richard, MSc
11:15 am—11:30 am	<b>B73</b>	<b>Why Not Ys? Probabilistic Interpretation of Y-STRs</b> Jo-Anne Bright, PhD*; Emma Marie, MSc; John Buckleton, DSc; Paul Stafford-Allen, BSc; Hannah Kelly, PhD
11:30 am—1:00 pm	<b>BREAK</b>	

## The Past Year and How it Will Shape the Future

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Moderator: Hannah Eisenmenger, MS

Co-Moderator: Kaylene Bishop, MSc

1:00 pm—1:15 pm	<b>B74</b>	<b>A New Resource for Reporting DNA Limitations From the Human Forensic Biology Subcommittee of the OSAC</b> Jarrah Kennedy, MS*; Michelle Madrid, MS*
1:15 pm—1:45 pm	<b>B75</b>	<b>Highlights and Lessons From the 2025 INTERPOL DNA Review</b> John Butler, PhD*

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1:45 pm—2:00 pm	<b>B76</b>	<b>Standards Development Activities in Human Forensic Biology</b> Jillian Conte, PhD*; Charlotte Word, PhD; Jarrah Kennedy, MS
2:00 pm—2:30 pm	<b>B77</b>	<b>How Increasing Transparency in Casefile Documentation Strengthened a Laboratory's Quality Management System</b> Britton Morin, MSFS*; Jan Pappas, MS*
2:30 pm—2:45 pm	<b>B78</b>	<b>Restoring Scientific Rigor in Forensic Science in South Africa</b> Antonel Olckers, PhD*
2:45 pm—3:00 pm		<b>BREAK</b>

## Innovations in Sexual Assault Investigations

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Moderator: Kelly Knight, MS

Co-Moderator: Heather Kramer, MS

3:00 pm—3:15 pm	<b>B79</b>	<b>Single-Cell Evaluations About How Many and Who Donated to the Sperm</b> Catherine Grgicak, PhD*; Anu Khandelwal, MS; Desmond Lun, PhD; Qhawe Bhembe, MS
3:15 pm—3:30 pm	<b>B80</b>	<b>Catch a Sperm! The Integration of STK Sperm Tracker and Immunochromatographic Tests for Simultaneous Detection of Semen and Saliva in Sexual Assault Cases</b> Mayaas Hassan, BA; Lucia Julvez Martinez, BA; Sara C. Zapico, PhD*; Gabriela Roca, MD, PhD; Polina Khalizov; Jennifer Santos, BS
3:30 pm—3:45 pm	<b>B81</b>	<b>The Development of a High-Throughput Automated Method to Process Sexual Assault Kits With Increased Male DNA Recovery Utilizing an Innovative Technology</b> Yogesh Prasad, PhD*; Hiromi Brown, PhD; Sudhir Sinha, PhD; Randy Nagy, BSc; Sid Sinha, MBA; Anusha Prasad
3:45 pm—4:00 pm	<b>B82</b>	<b>A Proteomic Analysis of DNA Extraction and Isolation Waste: Having Your DNA Cake and Proteome Too!</b> Glendon Parker, PhD*; Daniella Corene Luistro, MSFS; Kyle Burk, MS; Allysa Tewksbury, MSFS; Phillip Danielson, PhD; Christian Westering, PhD
4:00 pm—4:30 pm	<b>B83</b>	<b>Harnessing New Enzymes to Improve Differential Extraction</b> Robin Cotton, PhD*
4:30 pm—4:45 pm		<b>BREAK</b>

## Non-Human DNA

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Moderator: Ashley Hall, PhD

Co-Moderator: Sarah Seashols, PhD

4:45 pm—5:00 pm	<b>B84</b>	<b>Optimizing a DNA-Based Workflow for Distinguishing Marijuana From Hemp: An Alternative to Traditional GC/MS Analysis</b> Rory Conn, BS*; Ya-Chih (Jessica) Cheng, PhD; Tanya Ryzi, BS
5:00 pm—5:15 pm	<b>B85</b>	<b>Tracing Time Through Touch: Fingerprints and Microbes as Temporal Tools to Date Evidence</b> Josep De Alcaraz-Fossoul, PhD*
5:15 pm—5:30 pm	<b>B86</b>	<b>Utilizing Digital PCR to Track Bacterial Transfer Following Sexual Assault</b> Dipanwita Raha, BSc*; Andrea Ramirez-Torres, BS; Bruce McCord, PhD; George Duncan, PhD; Mirna Ghemrawi, PhD
5:30 pm—5:45 pm	<b>B87</b>	<b>An Update on Wildlife Forensic Biology Standards Development Activities</b> Tasha Bauman, MS*

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## Thursday—Session II

### Let's Get this Controlled Substances Party Started, Bring your own Beads

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Moderator: Brooke Kammrath, PhD

Co-Moderator: Marianne Staretz, PhD

8:00 am—8:15 am	<b>B88</b>	<b>The 2026 Update From the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG)</b> Jaclyn Iera, PhD*
8:15 am—8:30 am	<b>B89</b>	<b>Seized Drug Trends in the Northeastern United States: A Decade of Macro and Micro Trends</b> Tara Rossy, BS*
8:30 am—8:45 am	<b>B90</b>	<b>ATR/FTIR and Raman Hyperspectral Imaging With Chemometric Modeling for the Detection of Xylazine in Illicit Drug Mixtures</b> Xuyang He, PhD*
8:45 am—9:00 am	<b>B91</b>	<b>Multi-Drug Quantification by LC/MS/MS: Overcoming Enhancement and Suppression</b> Joshua DeBord, PhD*; Max Denn, MS; Barry Logan, PhD; Alex Krotulski, PhD
9:00 am—9:15 am	<b>B92</b>	<b>A Method Development for Ultraviolet Absorbance and Fluorescence Detection of Psilocybin and Psilocin Following Liquid Chromatographic Separation</b> George Sakellariou, BS*; Walter Wilson, PhD; Ya-Chih (Jessica) Cheng, PhD
9:15 am—9:30 am	<b>B93</b>	<b>Distinguishing Between the Tandem Mass Spectra of Positional Fentanyl Analogs Using the Expert Algorithm for Substance Identification</b> Alexandra Adeoye, MS*; Sandra Rodriguez-Cruz, PhD; Glen Jackson, PhD
9:30 am—9:45 am	<b>B94</b>	<b>The Optimization and Validation of a Method for Rapid Quantitation of Fentanyl in Seized-Drug Samples Using Direct Analysis in Real Time-Mass Spectrometry (DART-MS)</b> Sandra Rodriguez-Cruz, PhD*
9:45 am—10:00 am		<b>BREAK</b>

### Criminalistics Gone Wild - AGAIN?!

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Moderator: Kyle Konkol, BS

Co-Moderator: Patrick Buzzini, PhD

10:00 am—10:30 am	<b>B95</b>	<b>It Could Happen to You: a Forensic Scientist in the Crosshairs—Epilog</b> Laskowski Gregory, MPA*
10:30 am—12:00 pm	<b>B96</b>	<b>Criminalistics Gone Wild—Does Technology Kill the Truth?</b> Patrick Buzzini, PhD*; Anna Duggar, PhD*; Claude Roux, PhD*; Michelle Miranda, PhD*; Sheila Willis, DSc*; Mark Profili, MFS*
12:00 pm—1:00 pm		<b>BREAK</b>

### The Smallest Clues Ignite the Biggest Presentations

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Moderator: Beth Goodspeed, MS

Co-Moderator: Luther Schaeffer, MFSF

1:00 pm—1:15 pm	<b>B97</b>	<b>Standards Development Activities in Trace Materials</b> Sandra Koch, PhD*; Celeste Grover, MSFS; Jennifer Remy, MS
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1:15 pm—1:45 pm	<b>B98</b>	<b>The Basics of Light Microscopy: Getting the Most Out of Your Microscope</b> Author: J. Schrode, BS*
1:45 pm—2:00 pm	<b>B99</b>	<b>Assessing the Utility of Elemental Profiling to Differentiate the Silt-Sized Fraction of Soils Collected at Varying Spatial Scales</b>  Peixuan Du, BS*; Libby Stern, PhD; Jack Hietpas, PhD; Kelly Meiklejohn, PhD
2:00 pm—2:15 pm	<b>B100</b>	<b>An Investigation of the Effects of Detonation on the Analysis and Comparison of Electrical Tape Backings</b> Swathi Murali, MS*; Patrick Buzzini, PhD
2:15 pm—2:30 pm	<b>B101</b>	<b>The Effects of Adhesives on the Subsequent Fourier Transform Infrared (FTIR) Analysis of Paint and Fibers</b> Ashlyn Bartley, MSFS*; Ted Schwartz, MS
2:30 pm—2:45 pm	<b>B102</b>	<b>Using Raman Microscopy to Distinguish Dyed Textile Fibers</b> Alexis Wilcox, MS*; Lydia Burnett, MASc; Joseph Donfack, PhD
2:45 pm—3:00 pm	<b>B103</b>	<b>A Deep Transfer Learning Framework for the Detection of Ignitable Liquid Residues in Burned Substrates Across Inter-Laboratory GC/MS Systems</b> Ting-Yu Huang, PhD*; Jorn Yu, PhD
3:00 pm—3:15 pm	<b>B104</b>	<b>A Refinement of the Expert Algorithm for Substance Identification (EASI) to Predict ASTM E1618-19 Ignitable Liquid Classes From Gas Chromatography/Mass Spectrometry Data of Ignitable Liquid Residues</b> Hannah McMillen, MS*; Glen Jackson, PhD
3:15 pm—3:30 pm	<b>B105</b>	<b>An Evaluation of Kinetic and Thermodynamic Approaches to Predict Evaporation of Gasoline</b> Jenna Leppek, BS*; Hannah LaVoie, BS; Victoria McGuffin, PhD; Ruth Waddell Smith, PhD
3:30 pm—3:45 pm	<b>B106</b>	<b>The Application of a Conditional Source Estimation Method Using Competitive Similarity to Aluminum Powder Sources From Detonated Improvised Explosives Device</b> Janean Hanka, MS*; Jack Hietpas, PhD; Danica Ommen, PhD; JoAnn Buscaglia, PhD; Christopher Saunders, PhD; Donald Gantz, PhD
3:45 pm—4:00 pm		<b>BREAK</b>

## Prints and Pistols

Moderator: Elizabeth Gardner, PhD

Co-Moderator: Hamidreza Sharifan, PhD

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4:00 pm—4:30 pm	<b>B107</b>	<b>Evaluating Reporting Practices in Fingerprint Comparisons Using Information Theory: Five Response Categories Are Better Than Three</b> Thomas Busey, PhD*; Jeffrey Starns, PhD; Meredith Coon, MFS; Nada Aggadi, BA; Andrew Cohen, PhD
4:30 pm—4:45 pm	<b>B108</b>	<b>Forensic fingerprint detection through adhesive tapes using Optical Coherence Tomography</b> Jiayun Liu, PhD*; Eddie Tan, N/A or In Progress; Yan Wen Crystal Tan, BSc; Chin Chin Lim; Chiew Yung Yang, MFSA
4:45 pm—5:00 pm	<b>B109</b>	<b>Standards Development Activities Related to Friction Ridge Examination</b> Steven Johnson, BS*; Heidi Eldridge, PhD

# CRIMINALISTICS

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5:00 pm—5:15 pm	<b>B110</b>	<b>Advancing the Understanding of 3D Imaging for Firearms Identification</b> Melissa Nally, BA*; Heike Hofmann, PhD*; Alicia Carriquiry, PhD; Jeffrey Salyards, PhD; Donna Eudaley, BS*; Preshious Rearden, PhD
5:15 pm—5:30 pm	<b>B111</b>	<b>Accuracy, Efficacy, and Reproducibility of Muzzle-to-Target Distance Determination Using Gunshot Residue</b> R. Austin Hicklin, PhD*; Nicole Richetelli, PhD*
5:30 pm—5:45 pm	<b>B112</b>	<b>Thermal Persistence and Variations of Inorganic Gunshot Residue</b> Gianmarco Argentiero, MD*; Barbara Bertoglio, MSc, PhD; Silvia Visonà, MD, PhD; Nicolas Martinelli, MD; Giovanni Cecchetto, MD, PhD; Daniele Merli, PhD
5:45 pm—6:00 pm	<b>B113</b>	<b>The AFTE Procedural Support Committee</b> Jennifer Floyd, BS*
6:00 pm—6:15 pm	<b>B114</b>	<b>OSAC/ASB Standards Development Activities in Firearm and Toolmark Examination</b> Rebecca LoBalbo, MPA*; Jennifer Floyd, BS*

## Friday

### Poster Session

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11:30 am – 1:00 pm	<b>B115</b>	<b>An Investigation of the Secondary Transfer of GSR From a Shooter to Common Inanimate Objects</b> Brittany Claassen, MS*; Charley Cross, BS; Kim Kunkler, PhD
11:30 am – 1:00 pm	<b>B116</b>	<b>An Evaluation of Barrel Wear Caused by Polymer-Coated Ammunition</b> Eden Amin, BS/BA*; Eric Law, PhD; James Creecy, PhD; Stephanie Luehr, MS
11:30 am – 1:00 pm	<b>B117</b>	<b>A Quantitative Analysis of Full and Partial Shotgun Pellet Patterns for Distance Determination</b> Jamison Trimber, BS*; Stephanie Walcott, MScFS
11:30 am – 1:00 pm	<b>B118</b>	<b>A Handcrafted Pen Gun Suicide: A Case Report</b> Quentin Rébillard, MD*; Christian Brocard, PhD; Laurent Martrille, MD, PhD; Emmanuel Margueritte, MD; Clarisse Dubois, MD; Elise Arbefeulle, MD
11:30 am – 1:00 pm	<b>B119</b>	<b>A Comparison of Solid Phase Microextraction and Purge and Trap Methods for Measuring VOCs Emanating From Li-Ion Batteries and Electronic Media</b> Samuel DeNight, BS*; Edward Bentil, PhD; Brian Eckenrode, PhD
11:30 am – 1:00 pm	<b>B120</b>	<b>Crystals Under the Lens: A Microscopical and Micro-Raman Analysis of Inorganic Oxidizers in Pyrotechnic-Based IEDs</b> Carissa Burton, BS*; Jared Estevanes, PhD; Patrick Buzzini, PhD; Geraldine Monjardez, PhD
11:30 am—1:00 pm	<b>B121</b>	<b>Evaluating Line Illumination Sampling of a Hand-Held Raman Spectrometer for Detecting Hydraulic Fluid Contamination in Jet Fuel</b> Megan Linson, BS*; Javier Hodges, BS; Jorn Yu, PhD
11:30 am—1:00 pm	<b>B122</b>	<b>Optimizing Explosives Detection: How Burial Medium and Moisture Influence Ammonium Nitrate Vapor Transport</b> Joel Fuentes Carrasco, BS*; Emma Calabrese, PhD; Lauryn DeGreeff, PhD; Lindsay Waldrop, PhD

# CRIMINALISTICS

11:30 am—1:00 pm	<b>B123</b>	<b>Rapid Spectrophotometric Identification of Peroxide-Based Explosives Using a Modified Iodometric Method</b> Alana Connor*; Marianne Staretz, PhD
11:30 am—1:00 pm	<b>B124</b>	<b>The Application of Deep Learning in Source Attribution of Ignitable Liquid Residues in Fire Debris for Forensic Fire Investigation</b> Ting-Yu Huang, PhD*; Jorn Yu, PhD
11:30 am—1:00 pm	<b>B125</b>	<b>The Rapid Classification of Diesel and Gasoline by Raman Spectroscopy and Machine Learning in Support of Fire Investigations</b> Jung Tsai, BSc*; Jorn Yu, PhD
11:30 am—1:00 pm	<b>B126</b>	<b>TNT Explosive Residue Detection: An Investigation of Swabbing Substrates and Solvents Across Witness Materials Using GC-MS</b> Krystal VanHorn, BS*; Nicholas Jernigan, MS; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD; Jared Estevanes, PhD
11:30 am—1:00 pm	<b>B127</b>	<b>Two Techniques, One Goal: An Analysis of Intact Explosives Using Confocal Raman Microscopy and Direct Analysis in Real Time-High Resolution Mass Spectrometry (DART-HRMS)</b> Shannon Keyser, BS*; Alleigh Couch, BS; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD; Jared Estevanes, PhD
11:30 am—1:00 pm	<b>B128</b>	<b>Using Maggots as Passive Samplers for Explosive Odor Volatiles in Soil-Buried Scenarios</b> Laney Kimble, BS*; Joshua Smith, PhD; Paola Tiedemann, PhD
11:30 am—1:00 pm	<b>B129</b>	<b>Augmenting Dogs and Sensors for Improved Detection of Explosives and Drugs</b> Stephen Isbel, MS*; Patrick Roman, PhD; Kenneth Furton, PhD; Abuzar Kabir, PhD; Kelvin Frank, PhD; Michaela Clarke, MS
11:30 am—1:00 pm	<b>B130</b>	<b>Gelatin-Based Hydrogels as a Novel Medium for the Efficient Recovery of Organic Explosives from Post-Blast Residues: A Forensic Perspective</b> Khalid Feras, MPhil*; Khaled Masoud, PhD; Syed Mujeebuddin, MSc
11:30 am—1:00 pm	<b>B131</b>	<b>Beyond the Surface of Architectural Paint: A Comparative Analysis Using DART-MS and Spectroscopic Techniques</b> Geraldine Monjardez, PhD*; John Laetsch, MS; Patrick Buzzini, PhD; J. Tyler Davidson, PhD; Alleigh Couch, BS; Morgan Carpenter, BS
11:30 am—1:00 pm	<b>B132</b>	<b>Developing a Scale to Categorize the Sheddability of Fibers From Fabrics</b> Flavia Bucci Casari degli Atti di Sassoferrato, MS*; Ted Schwartz, MS
11:30 am—1:00 pm	<b>B133</b>	<b>Evaluating the Reproducibility and Interpretive Value of Micro-Spectrophotometry in the Forensic Differentiation of Blue Cotton and Polyester Fibers</b> Britney Hitt, MSc*; Deborah Moi, BSc; Larry Tang, PhD; Slun Booppasiri, MS; Andres Campiglia, PhD; Maria Aldaba
11:30 am—1:00 pm	<b>B134</b>	<b>A Multi-Analytical Characterization and Discrimination of Electrical Tapes Using GC/MS, FTIR, and Evaluation of Physical and Optical Properties</b> Rayven Cobb, BS*
11:30 am—1:00 pm	<b>B135</b>	<b>On the Characterization and Differentiation of Clearcoats in Automotive Paint Using UV-Visible Microspectrophotometry, FTIR Spectroscopy, and Raman Spectroscopy</b> Swathi Murali, MS*; Morgan Carpenter, BS; Patrick Buzzini, PhD

# CRIMINALISTICS

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11:30 am—1:00 pm	<b>B136</b>	<b>Thermal Alteration of Pollen Grains: Implications for Forensic Analysis</b> Jessica Valerio*; Anna Duggar, PhD
11:30 am—1:00 pm	<b>B137</b>	<b>DyeSPY: Establishing the First Forensic SERS Reference for Hair Dye Colorant Evidence</b> Aidan Holman, BSc*; Avery Maalouf; Dmitry Kurouski, PhD
11:30 am—1:00 pm	<b>B138</b>	<b>The Persistence of Soil Traces on Footwear: Interactions Between Organic Content and Contact Surface</b> Ashley Buchman, BS*; Jennifer Bonetti, PhD; Lawrence Quarino, PhD; Andra Lewis, PhD
11:30 am—1:00 pm	<b>B139</b>	<b>A Comparison and Characterization of Nitrocellulose, Gel, and Dip Powder Nail Products as Forensic Trace Evidence</b> Madison Lindung, MSFS*; Mallory Higgins; Tatiana Trejos, PhD
11:30 am—1:00 pm	<b>B140</b>	<b>Adhesive Tapes as Sorbent Supports: The Innovation, Challenges, and Potential of Activated Charcoal-Coated Tapes for Fire Debris Analysis</b> Grace Boyer; Alyssa Eddington, BS; Cynthia Tran, PhD*; Derek Collins, BS
11:30 am—1:00 pm	<b>B141</b>	<b>WITHDRAWN</b>
11:30 am—1:00 pm	<b>B142</b>	<b>Identifying Fiber Sources From Absorbance Spectral Data Using Statistics and Machine Learning</b> Slun Booppasiri, MS*; Larry Tang, PhD*; Andres Campiglia, PhD; Britney Hitt, MSc; Deborah Moi, BSc; Maria Aldaba
11:30 am—1:00 pm	<b>B143</b>	<b>Exploring the Persistence and Transfer of Trace DNA Samples Recovered From Door Handles in Burglary Scenarios</b> James Seltzer, BS*; Mechthild Prinz, PhD; Fabio Oldoni, PhD; Georgina Meakin, PhD
11:30 am—1:00 pm	<b>B144</b>	<b>Investigating the Dynamics of Trace DNA in a Burglary Scenario</b> Hailee Weiss, BS*; Edward Schikel, MBA; Fabio Oldoni, PhD; Megan Foley, PhD
11:30 am—1:00 pm	<b>B145</b>	<b>The Impact of Dissolvable Swab Technology for Single-Cell DNA Recovery From Forensic Evidence</b> Assa John, MS*
11:30 am—1:00 pm	<b>B146</b>	<b>Time Since Deposition Signatures for Trace Biological Samples Using Cellular Autofluorescence</b> Gabrielle Wolfe, BS*; Christopher Ehrhardt, PhD
11:30 am—1:00 pm	<b>B147</b>	<b>An Investigation of DNA Contribution From Trace Samples Recovered From a Screwdriver Used as a Murder Weapon</b> Lauren Kennedy, BS*; Mechthild Prinz, PhD; Fabio Oldoni, PhD; Tacha Hicks, PhD
11:30 am—1:00 pm	<b>B148</b>	<b>Indirect DNA Transfer to Duct Tape Rolls and Fidget Blasters Stored in Cars</b> Rachel Chan, MS; Yuching Chung, MS; Mechthild Prinz, PhD*
11:30 am—1:00 pm	<b>B149</b>	<b>Evaluating the Impact of Surface Type and Swab Moistening Conditions on Trace Collection Efficiency</b> Anna Franzoni, MSc*; Michele Rosso, PhD
11:30 am—1:00 pm	<b>B150</b>	<b>The Evaluation of a Mini-Vacuum Device for the Collection for Low-Level Samples</b> Kayli Carrillo, BS*; Rachel Houston, PhD

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# CRIMINALISTICS

11:30 am—1:00 pm	<b>B151</b>	<b>The Influence of Primary Contact Deoxyrinonuleacic Acid (DNA) on the Detection of Passively Transferred DNA in Forensic Casework Environments</b> Lauren Watts, BS*; Kimberly Freeman, MFS; Susan Greenspoon, PhD; Christopher Ehrhardt, PhD
11:30 am—1:00 pm	<b>B152</b>	<b>Exploring the Persistence and Transfer of DNA Under Fingernails in Mock Physical Assaults</b> Jean Poulson, BS*; Sarah Gino, MD; Daniele Podini, PhD; Fabio Oldoni, PhD; Anna Franzoni, MSc
11:30 am—1:00 pm	<b>B153</b>	<b>ChronoGenetics: Beyond Identity—Reconstructing the When, Where, and Why of DNA Evidence</b> Tasneem Abdelaziz*
11:30 am—1:00 pm	<b>B154</b>	<b>Method Development for Interpreting DNA Mixtures From SNP Sequencing Data</b> Betzaida Maldonado, MSFS*; Christopher Gignoux, PhD
11:30 am—1:00 pm	<b>B155</b>	<b>Enhancing Forensic DNA Interpretation: A Combined STR-Microhaplotype Framework for EuroForMix</b> Natalie Holder, BS*; Abigail McDougall, BS*; Daniele Podini, PhD; Zack Beyerl, MFS

## Friday—Session I

### Hairs, Bones, and Missing Persons

Moderator: Nasir Butt, PhD

Co-Moderator: Megan Foley, MSFS, PhD

8:00 am – 8:15 am	<b>B156</b>	<b>Optimized Silica Column-Based Extraction for the Capture of Highly Degraded Nuclear DNA From Rootless Hairs</b> Mia Gale, BS*; Vinalon Mones, MFS; Daniele Podini, PhD; Helene Douglas, BSc; Elaine Lewis, PhD
8:15 am—8:30 am	<b>B157</b>	<b>The Extraction and Genotyping of Nuclear DNA From Rootless Hair Shafts Using Capture Hybridization</b> Daniele Podini, PhD*; Elaine Lewis, PhD; Helene Douglas, BSc; Vinalon Mones, MFS; Mia Gale, BS
8:30 am—8:45 am	<b>B158</b>	<b>The Impact of Maggot Feeding on Tissue Time Point Collection and DNA Recovery Success From Decomposing Rat (<i>Rattus Norvegicus</i>) Tissues</b> Ashley Morgan, PhD*; Samantha Sawyer, PhD
8:45 am—9:00 am	<b>B159</b>	<b>Why Mutation Models Matter: Enhancing Accuracy in Relationship Testing</b> Sanne Aalbers, PhD*; Katherine Gettings, PhD
9:00 am—9:15 am	<b>B160</b>	<b>Missing Person Identification: Anthropologic and Genetic Analyses of the Remains of the Fourth Victim of a Serial Killer in Southwest Ghana</b> Kofi Afrifah, APM*
9:15 am—9:30 am	<b>B161</b>	<b>Enhancing Identification of Unidentified Human Remains: The Performance of SNP-Based Approaches Across Diverse Ancestries</b> Heather McKiernan, PhD*
9:30 am—9:45 am		<b>BREAK</b>

# CRIMINALISTICS

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## Rapid DNA

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Moderator: Kristen Thoms, MSFS

Co-Moderator: Pamela Marshall, PhD

9:45 am—10:00 am	<b>B162</b>	<b>A Computer Interpretation of RapidHIT Mixtures for DNA Match Information</b> Paul Berry, MS*; Baron Andrus, MS; Mark Perlin, MD, PhD*; William Allan, MS
10:00 am—10:15 am	<b>B163</b>	<b>Rapid DNA Identification of Human Remains in Diverse Conditions: What Works, What Doesn't</b> Kayli Carrillo, BS*; Sheree Hughes, PhD
10:15 am—10:30 am	<b>B164</b>	<b>An Evaluation of Compromised Teeth Using an Optimized Sample Preparation Method and the Applied Biosystems RapidHIT ID System</b> Raygan Harrington, MScFS*; Yen Dang, MScFS; Tracey Dawson Green, PhD; Ali Mojarad, DDS; Janina Golob Deeb, DDS; Morgan Eaton, MScFS
10:30 am—10:45 am		<b>BREAK</b>

## Lessons From Exonerations

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Moderator: Amanda Mendoza, MS

Co-Moderator: Khalid Lodhi, DSc

10:45 am—11:30 am	<b>B165</b>	<b>Forensic Science Bias Against the Wrongfully Accused: Sperm Fractions, Defense Hypotheses, Screening Tests, and the Absence of Evidence—Lessons From Exonerations</b> Greg Hampikian, PhD*
11:30 am—1:00 pm		<b>BREAK</b>

## Forensic Investigative Genetic Genealogy

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Moderator: Season Seferyn, MSFS

Co-Moderator: Fabio Oldoni, PhD

1:00 pm—1:15 pm	<b>B166</b>	<b>The Current Landscape of Forensic Genetic Genealogy Implementation, Understanding, and Opinions in the United States</b> Julia Otto*; Melanie Armstrong, BA; Tynan Peterson, MA; Megan Foley, PhD
1:15 pm—1:30 pm	<b>B167</b>	<b>How Should We Report Genetic Matches Following an Investigative Genetic Genealogy Search?</b> Ferial Ouerghi, BS*; Michael Edge, PhD; Dan Krane, PhD
1:30 pm—2:15 pm	<b>B168</b>	<b>When Science Speaks for the Dead: A Multi-Collaboration for Human Remains Identification</b> Lisa Mertz, MS*; Karen Ross, JD*
2:15 pm—2:30 pm		<b>BREAK</b>

## Massively Parallel Sequencing

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Moderator: Christina Sorensen

Co-Moderator: Nidhi Subhashini, PhD

2:30 pm—2:50 pm	<b>B169</b>	<b>Solving Complex DNA Mixtures With Next Generation Sequencing</b> Kari Danser, MS*; William Allan, MS; Mark Perlin, MD, PhD*
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# CRIMINALISTICS

2:50 pm—3:10 pm	<b>B170</b>	<b>The Developmental Validation of Software for Deconvolution of Mixed mtDNA Samples</b> Brian Young, PhD*; Tom Faris, BSc
3:10 pm—3:30 pm	<b>B171</b>	<b>The Development and Evaluation of a Phase Analysis Pathway for mtDNA Mixture Deconvolution</b> Zack Beyerl, MFS*; Robert Lagacé, BA; Daniele Podini, PhD
3:30 pm—3:50 pm	<b>B172</b>	<b>An Evaluation of a qPCR-Based Normalization Strategy to Improve Sample-to-Sample Read Depth Balance in STR Libraries Generated Using the IDseek CombiSTR Plus Reverse Complement PCR Technology</b> Eleanor Starkey, BS*; Coral Smith, MS; Jill van Wolferen, MSc; Joop Theelen, BASc; Mirna Ghemrawi, PhD
3:50 pm—4:10 pm	<b>B173</b>	<b>A Forensic Quantification Kit for Human and Bacterial DNA Using Nanoplate Digital Polymerase Chain Reaction</b> Sylvia Etim, MS*; Bruce McCord, PhD
4:10 pm—4:30 pm	<b>B174</b>	<b>An Evaluation of the NexGenID Software for Complex Mixture Deconvolution Using Microhaplotypes</b> Lauren Borchert, BS*; Sarah Cavanaugh, MSFS; Daniele Podini, PhD; Andrew Feldman, PhD; Emily Kim, BS; Jeffrey Lin, MS
4:30 pm—4:50 pm	<b>B175</b>	<b>Linkage Patterns of Forensically Relevant Identity SNPs and Autosomal STRs Commonly Multiplexed in Sequencing Assays</b> Isabella George, MFS*; Megan Foley, PhD; Daniele Podini, PhD; Jamie Belrose, PhD
4:50 pm—5:10 pm	<b>B176</b>	<b>The Identification and Optimization of MicroRNA Biomarkers for Predicting Body Weight and Muscularity in Forensic Samples</b> Xiaomeng (Simone) Yang, MS*; Daja Bonilla, BSFS; Sarah Seashols-Williams, PhD; Paul Brooks, PhD; Kimberly Lettner, MFS
5:10 pm—5:30 pm	<b>B177</b>	<b>Next-Gen Solutions: Advancing the Detection of Degraded DNA in Forensics</b> Emily Quartemont, BS*; Kristen Naughton, BS; Heather Sarik, MS

## Friday—Session II

### The Fungicide Did It

Moderator: James Cizdziel, PhD

Co-Moderator: Geraldine Monjardez, PhD

8:00 am—8:15 am	<b>B178</b>	<b>Impurity Profiling: A Critical Nexus of Pharmaceutical Quality and Forensic Drug Investigation</b> Tahir Jamshaid, MPhil*
8:15 am—8:30 am	<b>B179</b>	<b>Quantifying the Similarity of Chemical Spectra</b> Hana Lee, PhD; Alicia Carriquiry, PhD*
8:30 am—8:45 am	<b>B180</b>	<b>Validation in Forensic Science: Guiding Principles for the Collection and Use of Validation Data</b> Henry Swofford, PhD*
8:45 am—9:00 am	<b>B181</b>	<b>Universal Method Development for Comprehensive GC-MS Analysis in Forensic Chemistry</b> Breanne Hamlett, PhD*; Emily Rue, PhD*; Jack Stephenson, MBA; Evelyn Ligon, PhD; Aura Ammenhauser, BS; C.J. Kelsheimer, PhD

# CRIMINALISTICS

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9:00 am—9:15 am	<b>B182</b>	<b>A Bug's Life: A Soft Ionization Mass Spectrometric Approach for the Species Identification of Unknown Entomological Evidence for Postmortem Interval Determination</b> Alexa Figueroa, BS*; Robert Cody, PhD; Rabi Musah, PhD; Jennifer Rosati, PhD
9:15 am—9:30 am	<b>B183</b>	<b>The Detection of Oral Fluid Stains on Fabric Via Solution Extraction Combined With Deep Ultraviolet Raman Spectroscopy</b> Igor Lednev, PhD*; Mohamed Amin, PhD; Entesar Al-Hetlani, PhD
9:30 am—9:50 am	<b>B184</b>	<b>The Fungicide Did It: False Negatives and Decreased Sensitivity of Heme Tests on a Leather Substrate</b> Lily Manzi, BA; Allyn Schoeffler, PhD; Anna Duggar, PhD*
9:50 am—10:10 am	<b>BREAK</b>	

## A Green Groundhog in the Crosshairs

Moderator: A. Bakarr Kanu, PhD, MRSC

Co-Moderator: Tiffany Rodriguez, MS

10:10 am—10:30 am	<b>B185</b>	<b>Moving Toward a More Sustainability Forensic Science</b> Thomas Brettell, PhD*
10:30 am—11:00 am	<b>B186</b>	<b>The Three Stages of Standards Acceptance: A Groundhog Day's Guide to Implementation</b> Vincent Desiderio, MS*; Allison Getz, MS*
11:00 am—11:30 am	<b>B187</b>	<b>Developing an End-to-End Workflow to Perform Crime Scene Investigation and Training in Virtual Reality</b> Vincenzo Rinaldi, MSc*; Niamh Nic Daeid, PhD*
11:30 am—1:00 pm	<b>BREAK</b>	

## This Session Is Dope!

Moderator: Mikaela Romanelli, MS

Co-Moderator: Glen Jackson, PhD

1:00 pm—1:15 pm	<b>B188</b>	<b>That's Dope: A Novel Approach for the Differentiation of <math>\Delta^9</math>-THC Isomers in Cannabis</b> Alleigh Couch, BS*; Emma Hardwick, BA; J. Tyler Davidson, PhD; Christopher Zall, PhD; Christany Liggins, BS
1:15 pm—1:45 pm	<b>B189</b>	<b>Forensic Alcohol Testing of Jello Shots Given to Children</b> Laura Labay, PhD*; Lee Blum, PhD; Michael Lamb, MS; Justine Drake, MSFS; Nina McCullough, BA
1:45 pm—2:00 pm	<b>B190</b>	<b>Recent Trends in Fentanyl Adulteration: Results From the Near Real-Time Drug Checking RaDAR Program</b> Edward Sisco, PhD*
2:00 pm—2:15 pm	<b>B191</b>	<b>Thirdhand Exposure to Drugs From Residual Contamination: An analysis of Seized Contaminated Vehicles and Experimental Tests From Simulated Smoking of Methamphetamine in an Uncontaminated Vehicle</b> Stewart Walker, PhD*; Gemma Kerry, BSc; Jackie Wright, PhD; Kirstin Ross, PhD
2:15 pm—2:30 pm	<b>B192</b>	<b>The Detection and Quantification of Synthetic Cannabinoids and Other Novel Psychoactive Substances in Jail Contraband</b> Max Denn, MS*; Nicholas Khorozov, MS; Barry Logan, PhD; Alex Krotulski, PhD; Joshua DeBord, PhD

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# CRIMINALISTICS

2:30 pm—2:45 pm	<b>B193</b>	<b>Resolving the “Unresolvable” Tandem Mass Spectra of the Isomers THC and CBD Using the Expert Algorithm for Substance Identification (EASI)</b> Alexandra Adeoye, MS; Glen Jackson, PhD*
2:45 pm—3:00 pm	<b>B194</b>	<b>An Investigation Into the Decreased Abundance of Heroin in a Complex Mixture: A Gas Chromatography/Mass Spectrometry (GC/MS) Case Study of Seized Drug Evidence</b> Mikaela Romanelli, MS*
3:00 pm—3:15 pm	<b>B195</b>	<b>The Transacetylation of Controlled Substances in Analytical Matrices</b> Bailey Davis, MPS*; Jaclyn Beshlian, MFS*; Anthony Chiusano, BS; Jennifer Yung, MS; Daniel Azevedo, BS
3:15 pm—3:30 pm	<b>BREAK</b>	

## You Can’t Hide Your Dope From these Dogs

Moderator: Pete Ausili, MS

Co-Moderator: Mariah Carson, MSFS

3:30 pm—3:45 pm	<b>B196</b>	<b>From Concept to Consensus: Advancing Standards for Dogs and Sensors in Detection Applications</b> Andrea Medrano, MSFS*; Paola Tiedemann, PhD; Kenneth Furton, PhD; Suzanne Perry
3:45 pm—4:00 pm	<b>B197</b>	<b>Biological Sensor-Based Detection of Volatile Organic Compound Fractions From Human Remains</b> Rushali Dargan, PhD*; Ruchao Qian, MS; Lauryn DeGreeff, PhD; Fantasia Whaley, MSFS*; Joel Fuentes Carrasco, BS; Daigoro Greco, BS*
4:00 pm—4:15 pm	<b>B198</b>	<b>Detector Dogs: Advancing Drug Detection Operations Using Science at the United States Customs and Border Protection</b> Jonathan McGrath, PhD*; Armando Avallone, MS
4:15 pm—4:30 pm	<b>B199</b>	<b>The Development and Implementation of Fentanyl Training Aids to Advance Canine Detection Strategies</b> Armando Avallone, MS*; Jonathan McGrath, PhD
4:30 pm—4:45 pm	<b>B200</b>	<b>The Development and Evaluation of a Novel Alternative Canine Training Aid for Fentanyl</b> Jonathan McGrath, PhD*; Kristine Tanabe, PhD
4:45 pm—5:00 pm	<b>B201</b>	<b>Canine Training Aid Development of Novel Target Odors to Advance Strategies to Combat Fentanyl Precursors at the Border</b> Armando Avallone, MS*; Jonathan McGrath, PhD*
5:00 pm—5:15 pm	<b>B202</b>	<b>Canine Training Aid Substrate Optimization: Non-Targeted Contamination, and VOC Adsorption and Desorption</b> Fernando Zaldivar, BS*; Natalia Gil Guitierrez; Kenneth Furton, PhD; Lauryn DeGreeff, PhD; Eduardo Moreira
5:15 pm—5:30 pm	<b>B203</b>	<b>Standards Development Activities Related to Ignitable Liquids, Explosives, and Gunshot Residue</b> Laura Hernandez, BS*