

CRIMINALISTICS

Wednesday

Poster Session

- 11:30 am—1:00 pm **B1** **Advancing Forensic Analysis With Chemical Imaging Microspectroscopy**
James Cizdziel, PhD*; Kendall Wontor, PhD
- 11:30 am—1:00 pm **B2** **An Expanded Uncertainty Assessment of GC/MS Chromatographic Peak Area and Retention Time**
Emma Hardwick, BA*; J. Tyler Davidson, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B3** **The Application of HS/SPME-GC/MS for Hydraulic Fluid Compound Detection in Jet Fuels**
Javier Hodges, BS*; Jorn Yu, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B4** **An Evidence-Based Method for Determining Cause of Death in a Double Homicide Involving Matricide and Patricide**
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 **B5** **A Forensic Approach to Quantifying Environmental Tobacco Smoke Exposure in Hair: Method Development and Analysis of Cosmetic Treatment Effects**
Tanique Z Jones, BSc; Somayah Mohammadi, PhD; Hamidreza Sharifan, PhD*;
Christopher J Trejo, BSc
- 11:30 am—1:00 pm **B6** **Close Non-Matches and Database Searches: Probability That a True Match Is Among the Top K Correlations After a Database Search**
Blanca Parker, BA*; Alicia Carriquiry, PhD; Heike Hofmann, PhD
- 11:30 am—1:00 pm **B7** **Toward a New Forensic Tool: Elemental Profiling of Tire Rubber in Traffic Homicide Cases**
John Lucchi, PhD*; James McAleer, BS; Matthieu Baudelet, PhD
- 11:30 am—1:00 pm **B8** **Washington DC Department of Forensic Sciences: A Strategic Approach to Optimizing Laboratory Operational Efficiency—DC DFS's Implementation of the Casework Administration Group**
Krystyna Hopkinson, MScFS*
- 11:30 am—1:00 pm **B9** **Prints That Matter: Identifying the Most Productive Evidence Through Analytical Reporting**
Angelic Rountree, BS*
- 11:30 am—1:00 pm **B10** **The Relationship Between the Ridge Patterning and the Frequency of Minutiae on the Interdigital Area of Palmprints**
Angela Tonietto, MSc*; Patrick Buzzini, PhD
- 11:30 am—1:00 pm **B11** **Cracking the Fingerprint Clock: Age-Dating Latent Fingerprints Using Multivariate Chemical Degradation Models**
James Nketsiah, MPhil*
- 11:30 am—1:00 pm **B12** **WITHDRAWN**

CRIMINALISTICS

11:30 am—1:00 pm	B13	Gender Classification From Fingerprints In the East Indian Population Ms.Roshni Butt, PhD*
11:30 am—1:00 pm	B14	Hand Detail Image Comparisons: The State of the Discipline for an Emerging Forensic Methodology Nicole Richetelli, PhD*; William Chapman, APM; Richard Vorder Bruegge, PhD; Jim Cole
11:30 am—1:00 pm	B15	Reaping the Research: Patent Landscape Analysis of Latent Fingerprint Processing Techniques (1900–2024) Jatin Kumar Sharma, MScFS*; Abhilasha, MS
11:30 am—1:00 pm	B16	The Washing Away of Evidence: The Effect of Different Washing Treatments on Body Fluid Identification and DNA Profiling From Stained Clothing Fabrics Sara C. Zapico, PhD*; Francisco Medina-Paz, PhD; Maria Josefina Castagnola, MSc; Gabriela Roca, MD, PhD; Vasilisa Yukhno
11:30 am—1:00 pm	B17	The Differentiation of Cell Populations in Saliva-Skin Mixture Samples Using Cellular Autofluorescence Profiling Kara Fairfax, BS*; Christopher Ehrhardt, PhD; Arianna DeCorte, MS
11:30 am—1:00 pm	B19	A New Spin on DNA Extraction: Validating SpermX GenSpin Differential Extraction for Sexual Assault Evidence Processing Tori Tyree, BS*; Amy McGuckian, MFS; Julie Sikorsky, MSc; Kelly Beatty, MSFS
11:30 am—1:00 pm	B20	Cell-Free DNA From Clinical Sperm Samples Xuxiang LI, MS*; Robin Cotton, PhD
11:30 am—1:00 pm	B21	Differential Extraction: A Comparison of SpermX and I-Sep DL-MB to Determine Cell Separation Efficiency and Kit Sensitivity Evan Wheeler, MS*; Rhonda Williams, PhD
11:30 am—1:00 pm	B22	From Swabs to Sequencing: Integrating Y-Screening and NGS Into Sexual Assault Evidence Processing Lyndsy Stacy, MS*; Joshua Boster, MS; Rachel Houston, PhD; Jennifer Snedeker, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 am—1:00 pm	B23	DNA Sample Success Rates and Selecting the Most Impactful Evidence for DNA Testing Julie Ferragut, BS*
11:30 am—1:00 pm	B24	MixMaSTR: A Software Package for Designing and Interpreting Forensic DNA Validation Studies Sarah Riman, PhD*; Hari Iyer, PhD; Peter Vallone, PhD; Sarra Chouder, MSc; Edgar Robitaille; Benjamin Long, BBA
11:30 am—1:00 pm	B25	Validation of the ForenSeq Kintelligence Kit on the MiSeq FGx for Investigative Genetic Genealogy at Marshall University Forensic Science Center Tara Knoblach, BS*; Emma Katzmann, CLS; Eric Miller, MS; Laura Kuyper, MS; Cassandra Taylor, MS; Chelsea Garza, PharmD

CRIMINALISTICS

Thursday

Poster Session

11:30 am—1:00 pm	B26	A Quantitative Analysis of 12 Cannabinoids from Cannabis Samples Using UPLC-UV-MS Fiza Tajdin, BS*; Britni Skillman, PhD; J. Tyler Davidson, PhD <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 am—1:00 pm	B27	WITHDRAWN
11:30 am—1:00 pm	B28	An Analysis of Fentanyl Analogs in Multi-Component Drug Mixtures Using Surface-Enhanced Raman Spectroscopy Kristen Jerich, BSc*; Bruce McCord, PhD
11:30 am—1:00 pm	B29	A Cannabis Flower Potency Analysis by Using Liquid Chromatography/Triple Quadrupole/Mass Spectrometry Na Liu, PhD*; Liguang Song, PhD
11:30 am—1:00 pm	B30	The Development of a Validation and Implementation Package for the Quantification of Several Drugs by LC/MS/MS Meghan Appley, PhD*; Sarah Shuda, MS; Edward Sisco, PhD
11:30 am—1:00 pm	B31	Drug Profiling in Marion County, Indiana, Using Advanced Statistical Methods and Chemometrics Based on Components Detected by Gas Chromatography/Mass Spectrometry Natalie Holmes, BS*; Philip Brandyberry, MSFS; John Goodpaster, PhD
11:30 am—1:00 pm	B32	Evaluating Extraction Techniques for Mushrooms in Chocolate to Avoid Potential 4-Acetoxy-N,N-Dimethyltryptamine Hydrolysis Naria Ford-Thompson, MSFS*; Elizabeth Shields
11:30 am—1:00 pm	B33	Investigating the Stability and Degradation of Psilocybin and Psilocin in Mushroom Gummies: Implications for Forensic Analysis Alyssa Ricca, BS*; Marianne Staretz, PhD; Thomas Brettell, PhD; Mia Bercier, MSFS
11:30 am—1:00 pm	B34	Microcrystalline Tests for the Detection of Novel Psychoactive Substances (NPS) Grace Pavel*; Ruby Alley*; Kimiko Ferguson, PhD
11:30 am—1:00 pm	B35	The Development and Validation of a Rapid Direct Analysis in Real Time-Triple Quadrupole/Mass Spectrometry (DART-QqQ/MS) Method for Screening Nitazene Analogs Nicholas Khorozov, MS*; Alex Krotulski, PhD; Barry Logan, PhD; Joshua DeBord, PhD
11:30 am—1:00 pm	B36	Development and Validation of a GC-MS Method for the Quantitation of 23 Different Acidic and Neutral Cannabinoids Amal Ali, MA*; Mostafa Elhendawy, PhD; Mohamed Radwan, PhD; Amira Wanas, PhD; Suman Chandra, PhD; Mahmoud ElSohly, PhD; Murrell Godfrey, PhD
11:30 am—1:00 pm	B37	The Development of an Optimized Extraction Protocol for Cannabinoids From Cannabis Plant Material Emma Fitzgibbons, MS*; Britni Skillman, PhD; J. Tyler Davidson, PhD

CRIMINALISTICS

- 11:30 am—1:00 pm **B38** **The Identification of Methyl-Substituted Fentanyl Analogs Using Optimized Weighting Within the Inverted Library Search Algorithm (ILSA)**
Christany Liggins, BS*; Alleigh Couch, BS; J. Tyler Davidson, PhD; Arun Moorthy, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B39** **Under the Light: UV/Vis Spectrophotometry as a Tool for Characterizing Designer and Traditional Benzodiazepines in Varying Solvent Systems**
Kailee Marchand, BS*; Cailin Herl, MScFS; Geraldine Monjardez, PhD; Alaina Anderson, MS; James Miller, MA; Mona Colca, BA
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B40** **Using Dry ATR/FTIR Spectroscopy to Identify 1,4-Butanediol in Alcoholic Beverages**
Thomas Spudich, PhD*; Ethan Nugen; Christina Hayes, MNS; Marissa Purfeerst, BS
- 11:30 am—1:00 pm **B41** **A Headspace Analysis of Reference Grade and Seized Xylazine, 4-ANPP, and Nitazenes**
Sadie Olrogg, BS*; Lauryn DeGreeff, PhD
- 11:30 am—1:00 pm **B42** **LC/MS and GC/MS Analyses of the Decomposition Products of Fentanyl Using Various Oxidative Processes**
Mehdi Moini, PhD*; Edward Bentil, PhD; Brian Eckenrode, PhD
- 11:30 am—1:00 pm **B43** **Nitazene Analog Identification Using a Combination of Liquid Chromatography/Mass Spectrometry (LC/MS) and Gas Chromatography/Mass Spectrometry (GC/MS)**
Audrey Pless, BS*; Oriana Ovide, MS; Kai Allen, BS
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B44** **Optimizing a Portable-Capillary Liquid Chromatograph With Diode Array Detection for Illicit Drug Analysis**
Lauren Deem, BS*; Abigail Ladau, BS; Ira Lurie, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B45** **The Validation of an LC-PDA Method for the Quantitative Analysis of Cannabinoids in Homemade and Commercial Gummies**
Ya-Chih (Jessica) Cheng, PhD*; Walter Wilson, PhD
- 11:30 am—1:00 pm **B46** **Addressing the Oxygen in the Room: A Novel Approach for the Identification of Nitazene Analogs by Oxygenated Species Using DART-MS**
Emma Hardwick, BA*; Alleigh Couch, BS; J. Tyler Davidson, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B47** **Distinguishing Positional Isomers of Methylfentanyl**
Jennifer Skuches, MS*; Brianna Singh, BS*
- 11:30 am—1:00 pm **B48** **Enhancing Canine Detection Through the International Commission on Detector Dogs (ICODD)**
Kenneth Furton, PhD*; Kelvin Frank, PhD
- 11:30 am—1:00 pm **B49** **Illicit Cannabis Cultivation in California: Illegal Pesticides, False Packaging, and Risks to Human Health**
Vidia Gokool, PhD*
- 11:30 am—1:00 pm **B50** **Quantifying Dosage Risk: Fentanyl Concentrations in Counterfeit Drugs From Border Seizures**
Mia Borrelli, MSFS*; Amanda Mohr, MS; Barry Logan, PhD; Thom Browne, MA

CRIMINALISTICS

11:30 am—1:00 pm	B51	An Evaluation of Deactivations on Gas Chromatographic Stationary Phases for the Analysis of Seized Drugs of Abuse Amanda Ridgon, BS*; Corby Hilliard; Jared Burkhart, BSc Jamie York, PhD
11:30 am—1:00 pm	B52	What's in the Powder? Evaluating Fentanyl Test Strip Sensitivity to Common Household Items in Chemical Emergency Response Scenarios Kate Mongold, MS*; Heather Barkholtz, PhD; Meshel Lange, MS; Mason Shields, BS
11:30 am—1:00 pm	B53	The Impact of Environmental Contaminants on the Accuracy of Bacterial-Signature-Based Identification of Human Saliva Samples Briley Peacher, BS*; Baneshwar Singh, PhD
11:30 am—1:00 pm	B54	Investigating New Barcode Markers to Distinguish Kratom Varieties Jasmine Sierra, BS*; Cesar Cantu Jr., PhD; Rachel Houston, PhD; Kari Graham, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 am—1:00 pm	B55	An Evaluation of OpiumPlex for Genetic Profiling of the Opium Poppy Greta Hundtofte, BS*; Sara Willer, MS; Rachel Houston, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 am—1:00 pm	B56	Analyzing the Effects of Time and Temperature on SNP Markers in Fingernails to Indicate Asian and African American Descent Heather Coyle, PhD; Kelly Murphy, BS*
11:30 am—1:00 pm	B57	Sub-Regional Biogeographic Inference for East Asian Populations Using 165 AISNPs and Machine Learning Sohee Cho, PhD*; Sojung Lim, MD; Soong Deok Lee, MD, PhD
11:30 am—1:00 pm	B58	The Genetic Evidence Trail: Investigating MicroRNA Markers and Their Connection to Body Mass Index 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	B59	That's Some Pig: Protocol Optimization for the Analysis of DNA in Unpulverized Cremated Remains Kendall Kroha, MS*: Stephanie Gladysck, PhD; Austin Wickham, MS
11:30 am—1:00 pm	B60	Studying Human Decomposition Under Dry, Hot Desert Conditions: An Environmental Simulation Experiment Ashley Kaufman, BS*; Sheree Hughes, PhD; Mayra Eduardoff, PhD
11:30 am—1:00 pm	B61	The Umbilical Cord as a Novel DNA Sample for Comparison to Unidentified Human Remains Adelee Conner, MFS*; Cory Lawton, MFS; David Orbin, MFS; Ashley Platt, MS; Stephanie Storino, MPS
11:30 am—1:00 pm	B62	Infrared Insights: Using FTIR Spectroscopy to Predict DNA Viability in Burnt Bone Samples Emily Jasek, BS*; Ahana Chatterjee, MS; Amy Mundorff, PhD; Geraldine Monjardez, PhD; Mayra Eduardoff, PhD; Armando Anzellini, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 am—1:00 pm	B63	Direct STR Amplification of Human Hair Roots Stephanie Betts, MS; Ivette Espinoza Quiroga, MS; Linda Otterstatter, BS; Joseph Donfack, PhD*

CRIMINALISTICS

Thursday—Session I

Trace DNA and Activity-Level Evaluation

Moderator: Harmeet Kaur, PhD

Co-Moderator: Amber Smith, MSFS

- 8:00 am—8:15 am **B64** **The Fundamental Principles of Activity-Level Evaluation and Their Application to a DNA Case**
Simone Gittelsohn, PhD*; Tim Kalafut, PhD; James Curran, PhD; John Buckleton, DSc
- 8:15 am—8:30 am **B65** **Activity-Level Evaluations of Realistic Crime Scene Scenarios**
Ashley Hall, PhD*; Ray Wickenheiser, DPS*
- 8:30 am—8:45 am **B66** **An Enhanced Recovery Method to Improve DNA Profiling Success From Handled Bullet Casings**
Andria Morgan-Capers, BS*; Susan Greenspoon, PhD; Christopher Ehrhardt, PhD;
Stephanie Walcott, MScFS
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 8:45 am—9:00 am **B67** **The SCAnDi Project: Single-Cell Analysis for DNA Identification**
Iain Macaulay, PhD; Katherine Brown, PhD; George Zouganelis, PhD*; Lorna Dawson, PhD;
Ardhenu Beheraa, PhD; Michael Chen, PhD; Nick Dawnay, PhD
- 9:00 am—9:15 am **B68** **Continued Optimization of a High-Resolution Melt-Based Mixture Screening Tool and Evaluation as a Contributor Identification Tool**
Kiersten Fultz, BS*; Tracey Dawson Green, PhD; Chastyn Smith, PhD
- 9:15 am—9:30 am **BREAK**

The Annie Le Homicide

Moderator: Lynne Burley, MS

Co-Moderator: Dragan Primorac, MD, PhD

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

Probabilistic Genotyping

Moderator: Sylvia Etim

Co-Moderator: Catherine Navetta, BS

- 10:30 am—10:45 am **B70** **Lessons Learned in Implementing and Validating Probabilistic Genotyping**
R. Austin Hicklin, PhD*; Nicole Richetelli, PhD*
- 10:45 am—11:00 am **B71** **Turning Unsearchable Mixtures Into Actionable Intelligence for Reliable DNA Evidence**
Edward Schikel, MBA*; Terrance Lewis, MA; Mark Perlin, MD, PhD*; Matthew Legler, BS
- 11:00 am—11:15 am **B72** **Understanding and Reducing Variability in Complex DNA Mixture Interpretation: The Centre of Forensic Sciences Strategic Mixture Review**
Kelly Bowie, MSc; Tanis Gornall, MS; Michael Bissonnette, MS*; Sonja Stadler, PhD;
Melanie Richard, MSc

CRIMINALISTICS

11:15 am—11:30 am **B73** **Why Not Ys? Probabilistic Interpretation of Y-STRs**
Jo-Anne Bright, PhD*; Emma Marie, MSc; John Buckleton, DSc; Paul Stafford-Allen, BSc;
Hannah Kelly, PhD

11:30 am—1:00 pm **BREAK**

The Past Year and How it Will Shape the Future

Moderator: Hannah Eisenmenger, MS

Co-Moderator: Kaylene Bishop, MSc

1:00 pm—1:15 pm **B74** **A New Resource for Reporting DNA Limitations From the Human Forensic Biology Subcommittee of the OSAC**
Jarrah Kennedy, MS*; Michelle Madrid, MS*

1:15 pm—1:45 pm **B75** **Highlights and Lessons From the 2025 INTERPOL DNA Review**
John Butler, PhD*

1:45 pm—2:00 pm **B76** **Standards Development Activities in Human Forensic Biology**
Charlotte Word, PhD*; Jarrah Kennedy, MS*; Jillian Conte, PhD

2:00 pm—2:30 pm **B77** **How Increasing Transparency in Casefile Documentation Strengthened a Laboratory's Quality Management System**
Britton Morin, MSFS*; Jan Pappas, MS*

2:30 pm—2:45 pm **B78** **Restoring Scientific Rigor in Forensic Science in South Africa**
Antonel Olckers, PhD*

2:45 pm—3:00 pm **BREAK**

Innovations in Sexual Assault Investigations

Moderator: Kelly Knight, MS

Co-Moderator: Kyle Konkol, BS

3:00 pm—3:15 pm **B79** **Single-Cell Evaluations About How Many and Who Donated to the Sperm**
Catherine Grgicak, PhD*; Anu Khandelwal, MS; Desmond Lun, PhD; Qhawe Bhembe, MS

3:15 pm—3:30 pm **B80** **Catch a Sperm! The Integration of STK Sperm Tracker and Immunochromatographic Tests for Simultaneous Detection of Semen and Saliva in Sexual Assault Cases**
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 **B81** **The Development of a High-Throughput Automated Method to Process Sexual Assault Kits With Increased Male DNA Recovery Utilizing an Innovative Technology**
Yogesh Prasad, PhD*; Hiromi Brown, PhD; Sudhir Sinha, PhD; Randy Nagy, BSc;
Sid Sinha, MBA; Anusha Prasad

3:45 pm—4:00 pm **B82** **A Proteomic Analysis of DNA Extraction and Isolation Waste: Having Your DNA Cake and Proteome Too!**
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 **B83** **Harnessing New Enzymes to Improve Differential Extraction**
Robin Cotton, PhD*

4:30 pm—4:45 pm **BREAK**

CRIMINALISTICS

Non-Human DNA

Moderator: Ashley Hall, PhD

Co-Moderator: Sarah Seashols, PhD

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

Thursday—Session II

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

Moderator: Brooke Kamrath, PhD

Co-Moderator: Marianne Staretz, PhD

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

CRIMINALISTICS

Criminalistics Gone Wild - AGAIN?!

Moderator: Kyle Konkol, BS

Co-Moderator: Patrick Buzzini, PhD

Co-Moderator: Michelle Miranda, PhD

- 10:00 am—10:30 am **B95** **It Could Happen to You: A Forensic Scientist in the Crosshairs—Epilog**
Laskowski Gregory, MPA*
- 10:30 am—11:30 am **B96** **Criminalistics Gone Wild—Does Technology Kill the Truth?**
Patrick Buzzini, PhD*; Anna Duggar, PhD*; Claude Roux, PhD*; Michelle Miranda, PhD*;
Sheila Willis, DSc*; Mark Profili, MFS*
- 11:30 am—1:00 pm **BREAK**

The Smallest Clues Ignite the Biggest Presentations

Moderator: Andra Lewis, PhD

Co-Moderator: Beth Goodspeed, MS

Co-Moderator: Luther Schaeffer, MFSF

- 1:00 pm—1:15 pm **B97** **Standards Development Activities in Trace Materials**
Sandra Koch, PhD*; Celeste Grover, MSFS; Jennifer Remy, MS
- 1:15 pm—1:45 pm **B98** **The Basics of Light Microscopy: Getting the Most Out of Your Microscope**
James Schrode, BS*
- 1:45 pm—2:00 pm **B99** **Assessing the Utility of Elemental Profiling to Differentiate the Silt-Sized Fraction of Soils Collected at Varying Spatial Scales**
Jack Hietpas, PhD*; Peixuan Du, BS; Libby Stern, PhD; Kelly Meiklejohn, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 2:00 pm—2:15 pm **B100** **An Investigation of the Effects of Detonation on the Analysis and Comparison of Electrical Tape Backings**
Swathi Murali, MS*; Patrick Buzzini, PhD
- 2:15 pm—2:30 pm **B101** **The Effects of Adhesives on the Subsequent Fourier Transform Infrared (FTIR) Analysis of Paint and Fibers**
Ashlyn Bartley, MSFS*; Ted Schwartz, MS
- 2:30 pm—2:45 pm **B102** **Using Raman Microscopy to Distinguish Dyed Textile Fibers**
Alexis Wilcox, MS*; Lydia Burnett, MASc; Joseph Donack, PhD
- 2:45 pm—3:00 pm **B103** **A Deep Transfer Learning Framework for the Detection of Ignitable Liquid Residues in Burned Substrates Across Inter-Laboratory GC/MS Systems**
Ting-Yu Huang, PhD*; Jorn Yu, PhD
- 3:00 pm—3:15 pm **B104** **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**
Hannah McMillen, MS*; Glen Jackson, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 3:15 pm—3:30 pm **B105** **An Evaluation of Kinetic and Thermodynamic Approaches to Predict Evaporation of Gasoline**
Jenna Leppek, BS*; Hannah LaVoie, BS; Victoria McGuffin, PhD; Ruth Waddell Smith, PhD

CRIMINALISTICS

3:30 pm—3:45 pm **B106** **The Application of a Conditional Source Estimation Method Using Competitive Similarity to Aluminum Powder Sources From Detonated Improvised Explosives Device**
Janean Hanka, MS*; Jack Hietpas, PhD; Danica Ommen, PhD; JoAnn Buscaglia, PhD;
Christopher Saunders, PhD; Donald Gantz, PhD

3:45 pm—4:00 pm **BREAK**

Prints and Pistols

Moderator: Elizabeth Gardner, PhD

Co-Moderator: Hamidreza Sharifan, PhD

4:00 pm—4:30 pm **B107** **Evaluating Reporting Practices in Fingerprint Comparisons Using Information Theory: Five Response Categories Are Better Than Three**
Thomas Busey, PhD*; Jeffrey Starns, PhD; Meredith Coon, MFS; Nada Aggadi, BA;
Andrew Cohen, PhD

4:30 pm—4:45 pm **B108** **Forensic Fingerprint Detection Through Adhesive Tapes Using Optical Coherence Tomography**
Jiayun Liu, PhD*; Eddie Tan; Yan Wen Crystal Tan, BSc; Chin Chin Lim; Chiew Yung Yang, MFSA

4:45 pm—5:00 pm **B109** **Standards Development Activities Related to Friction Ridge Examination**
Steven Johnson, BS*; Heidi Eldridge, PhD

5:00 pm—5:15 pm **B110** **Advancing the Understanding of 3D Imaging for Firearms Identification**
Melissa Nally, BA*; Heike Hofmann, PhD*; Alicia Carriquiry, PhD; Jeffrey Salyards, PhD;
Donna Eudaley, BS*; Preshious Rearden, PhD

5:15 pm—5:30 pm **B111** **Accuracy, Efficacy, and Reproducibility of Muzzle-to-Target Distance Determination Using Gunshot Residue**
R. Austin Hicklin, PhD*; Nicole Richetelli, PhD*

5:30 pm—5:45 pm **B112** **WITHDRAWN**

5:30 pm—5:45 pm **B113** **The AFTE Procedural Support Committee**
Jennifer Floyd, BS*

5:45 pm—6:00 pm **B114** **OSAC/ASB Standards Development Activities in Firearm and Toolmark Examination**
Rebecca LoBalbo, MPA; Jennifer Floyd, BS*

Friday

Poster Session

11:30 am – 1:00 pm **B115** **Investigation of the Secondary Transfer of GSR From a Shooter to Common Inanimate Objects**
Brittany Claassen, MS*; Charley Cross, BS; Kim Kunkler, PhD

11:30 am – 1:00 pm **B116** **An Evaluation of Barrel Wear Caused by Polymer-Coated Ammunition**
Eden Amin, BS/BA*; Eric Law, PhD; James Creecy, PhD; Stephanie Luehr, MS

11:30 am – 1:00 pm **B117** **A Quantitative Analysis of Full and Partial Shotgun Pellet Patterns for Distance Determination**
Jamison Trimmer, BS*; Stephanie Walcott, MScFS

CRIMINALISTICS

- 11:30 am – 1:00 pm **B118** **A Handcrafted Pen Gun Suicide: A Case Report**
Quentin Rébillard, MD*; Christian Brocard, PhD; Laurent Martrille, MD, PhD;
Emmanuel Margueritte, MD; Clarisse Dubois, MD; Elise Arbefeuille, MD
- 11:30 am – 1:00 pm **B119** **A Comparison of Solid Phase Microextraction and Purge and Trap Methods for Measuring VOCs Emanating From Li-Ion Batteries and Electronic Media**
Samuel DeNight, BS*; Edward Bentil, PhD; Brian Eckenrode, PhD
- 11:30 am – 1:00 pm **B120** **Crystals Under the Lens: A Microscopical and Micro-Raman Analysis of Inorganic Oxidizers in Pyrotechnic-Based IEDs**
Carissa Burton, BS*; Jared Estevanes, PhD; Patrick Buzzini, PhD; Geraldine Monjardez, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B121** **Evaluating Line Illumination Sampling of a Hand-Held Raman Spectrometer for Detecting Hydraulic Fluid Contamination in Jet Fuel**
Megan Linson, BS*; Javier Hodges, BS; Jorn Yu, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B122** **Optimizing Explosives Detection: How Burial Medium and Moisture Influence Ammonium Nitrate Vapor Transport**
Joel Fuentes Carrasco, BS*; Emma Calabrese, PhD; Lauryn DeGreeff, PhD; Lindsay Waldrop, PhD
- 11:30 am—1:00 pm **B123** **Rapid Spectrophotometric Identification of Peroxide-Based Explosives Using a Modified Iodometric Method**
Alana Connor*; Marianne Staretz, PhD
- 11:30 am—1:00 pm **B124** **The Application of Deep Learning in Source Attribution of Ignitable Liquid Residues in Fire Debris for Forensic Fire Investigation**
Ting-Yu Huang, PhD*; Jorn Yu, PhD
- 11:30 am—1:00 pm **B125** **The Rapid Classification of Diesel and Gasoline by Raman Spectroscopy and Machine Learning in Support of Fire Investigations**
Jung Tsai, BSc*; Jorn Yu, PhD
- 11:30 am—1:00 pm **B126** **TNT Explosive Residue Detection: An Investigation of Swabbing Substrates and Solvents Across Witness Materials Using GC-MS**
Krystal VanHorn, BS*; Nicholas Jernigan, MS; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD; Jared Estevanes, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B127** **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)**
Shannon Keyser, BS*; Alleigh Couch, BS; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD; Jared Estevanes, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B128** **Using Maggots as Passive Samplers for Explosive Odor Volatiles in Soil-Buried Scenarios**
Laney Kimble, BS*; Joshua Smith, PhD; Paola Tiedemann, PhD
- 11:30 am—1:00 pm **B129** **Augmenting Dogs and Sensors for Improved Detection of Explosives and Drugs**
Stephen Isbel, MS*; Patrick Roman, PhD; Kenneth Furton, PhD; Abuzar Kabir, PhD; Kelvin Frank, PhD; Michaela Clarke, MS

CRIMINALISTICS

- 11:30 am—1:00 pm **B130** **Gelatin-Based Hydrogels as a Novel Medium for the Efficient Recovery of Organic Explosives from Post-Blast Residues: A Forensic Perspective**
Khalid Feras, MPhil*; Khaled Masoud, PhD; Syed Mujeebudin, MSc
- 11:30 am—1:00 pm **B131** **Beyond the Surface of Architectural Paint: A Comparative Analysis Using DART-MS and Spectroscopic Techniques**
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 **B132** **Developing a Scale to Categorize the Sheddability of Fibers From Fabrics**
Flavia Bucci Casari degli Atti di Sassoferrato, MS*; Ted Schwartz, MS
- 11:30 am—1:00 pm **B133** **Evaluating the Reproducibility and Interpretive Value of Micro-Spectrophotometry in the Forensic Differentiation of Blue Cotton and Polyester Fibers**
Britney Hitt, MSc*; Deborah Moi, BSc; Larry Tang, PhD; Slun Boopasiri, MS; Andres Campiglia, PhD; Maria Aldaba
- 11:30 am—1:00 pm **B134** **A Multi-Analytical Characterization and Discrimination of Electrical Tapes Using GC/MS, FTIR, and Evaluation of Physical and Optical Properties**
Rayven Cobb, BS*
- 11:30 am—1:00 pm **B135** **On the Characterization and Differentiation of Clearcoats in Automotive Paint Using UV-Visible Microspectrophotometry, FTIR Spectroscopy, and Raman Spectroscopy**
Swathi Murali, MS*; Morgan Carpenter, BS; Patrick Buzzini, PhD
- 11:30 am—1:00 pm **B136** **Thermal Alteration of Pollen Grains: Implications for Forensic Analysis**
Jessica Valerio*; Anna Duggar, PhD
- 11:30 am—1:00 pm **B137** **DyeSPY: Establishing the First Forensic SERS Reference for Hair Dye Colorant Evidence**
Aidan Holman, BSc*; Avery Maalouf; Dmitry Kurouski, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B138** **The Persistence of Soil Traces on Footwear: Interactions Between Organic Content and Contact Surface**
Ashley Buchman, BS*; Jennifer Bonetti, PhD; Lawrence Quarino, PhD; Andra Lewis, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B139** **A Comparison and Characterization of Nitrocellulose, Gel, and Dip Powder Nail Products as Forensic Trace Evidence**
Madison Lindung, MSFS*; Mallory Higgins; Tatiana Trejos, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B140** **Adhesive Tapes as Sorbent Supports: The Innovation, Challenges, and Potential of Activated Charcoal-Coated Tapes for Fire Debris Analysis**
Grace Boyer; Alyssa Eddington, BS; Cynthia Tran, PhD*; Derek Collins, BS
- 11:30 am—1:00 pm **B141** **WITHDRAWN**
- 11:30 am—1:00 pm **B142** **Identifying Fiber Sources From Absorbance Spectral Data Using Statistics and Machine Learning**
Slun Boopasiri, MS*; Larry Tang, PhD*; Andres Campiglia, PhD; Britney Hitt, MSc; Deborah Moi, BSc; Maria Aldaba

CRIMINALISTICS

- 11:30 am—1:00 pm **B143** **Exploring the Persistence and Transfer of Trace DNA Samples Recovered From Doorknobs in Burglary Scenarios**
James Seltzer, BS*; Mechthild Prinz, PhD; Georgina Meakin, PhD; Fabio Oldoni, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B144** **Investigating the Dynamics of Trace DNA in a Burglary Scenario**
Hailee Weiss, BS*; Edward Schikel, MBA; Megan Foley, PhD; Fabio Oldoni, PhD;
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B145** **The Impact of Dissolvable Swab Technology for Single-Cell DNA Recovery From Forensic Evidence**
Assa John, MS*
- 11:30 am—1:00 pm **B146** **Time Since Deposition Signatures for Trace Biological Samples Using Cellular Autofluorescence**
Gabrielle Wolfe, BS*; Christopher Ehrhardt, PhD
- 11:30 am—1:00 pm **B147** **An Investigation of DNA Contribution From Trace Samples Recovered From a Screwdriver Used as a Murder Weapon**
Lauren Kennedy, BS*; Mechthild Prinz, PhD; Tacha Hicks, PhD; Fabio Oldoni, PhD
- 11:30 am—1:00 pm **B148** **Indirect DNA Transfer to Duct Tape Rolls and Fidget Blasters Stored in Cars**
Rachel Chan, MS; Yuching Chung, MS; Mechthild Prinz, PhD*
- 11:30 am—1:00 pm **B149** **Evaluating the Impact of Surface Type and Swab Moistening Conditions on Trace Collection Efficiency**
Anna Franzoni, MSc*; Michele Rosso, PhD
- 11:30 am—1:00 pm **B150** **The Evaluation of a Mini-Vacuum Device for the Collection for Low-Level Samples**
Kayli Carrillo, BS*; Rachel Houston, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B151** **The Influence of Primary Contact Deoxyrinonucleic Acid (DNA) on the Detection of Passively Transferred DNA in Forensic Casework Environments**
Lauren Watts, BS*; Kimberly Freeman, MFS; Susan Greenspoon, PhD; Christopher Ehrhardt, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B152** **Exploring the Persistence and Transfer of DNA Under Fingernails in Mock Physical Assaults**
Jean Poulson, BS*; Sarah Gino, MD; Daniele Podini, PhD; Anna Franzoni, MSc;
Fabio Oldoni, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am—1:00 pm **B153** **ChronoGenetics: Beyond Identity—Reconstructing the When, Where, and Why of DNA Evidence**
Tasneem Abdelaziz*
- 11:30 am—1:00 pm **B154** **Method Development for Interpreting DNA Mixtures From SNP Sequencing Data**
Betzaida Maldonado, MSFS*; Christopher Gignoux, PhD
- 11:30 am—1:00 pm **B155** **Enhancing Forensic DNA Interpretation: A Combined STR-Microhaplotype Framework for EuroForMix**
Natalie Holder, BS*; Abigail McDougall, BS*; Daniele Podini, PhD; Zack Beyerl, MFS

CRIMINALISTICS

Friday—Session I

Hairs, Bones, and Missing Persons

Moderator: Nasir Butt, PhD

Co-Moderator: Megan Foley, MSFS, PhD

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

Rapid DNA

Moderator: Kristen Thoms, MSFS

Co-Moderator: Pamela Marshall, PhD

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

CRIMINALISTICS

Lessons From Exonerations

Moderator: Amanda Mendoza, MS

Co-Moderator: Khalid Lodhi, DSc

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

11:30 am—1:00 pm **BREAK**

Forensic Investigative Genetic Genealogy

Moderator: Season Seferyn, MSFS

Co-Moderator: Fabio Oldoni, PhD

1:00 pm—1:15 pm **B166** **The Current Landscape of Forensic Genetic Genealogy Implementation, Understanding, and Opinions in the United States**
Julia Otto*; Melanie Armstrong, BA; Tynan Peterson, MA; Megan Foley, PhD

1:15 pm—1:30 pm **B167** **How Should We Report Genetic Matches Following an Investigative Genetic Genealogy Search?**
Ferial Ouerghi, BS*; Michael Edge, PhD; Dan Krane, PhD

1:30 pm—2:15 pm **B168** **When Science Speaks for the Dead: A Multi-Collaboration for Human Remains Identification**
Lisa Mertz, MS*; Karen Ross, JD*

2:15 pm—2:30 pm **BREAK**

Massively Parallel Sequencing

Moderator: Christina Sorensen

Co-Moderator: Nidhi Subhashini, PhD

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

2:50 pm—3:10 pm **B170** **The Developmental Validation of Software for Deconvolution of Mixed mtDNA Samples**
Brian Young, PhD*; Tom Faris, BSc

3:10 pm—3:30 pm **B171** **The Development and Evaluation of a Phase Analysis Pathway for mtDNA Mixture Deconvolution**
Zack Beyerl, MFS*; Robert Lagacé, BA; Daniele Podini, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:30 pm—3:50 pm **B172** **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**
Eleanor Starkey, BS*; Coral Smith, MS; Jill van Wolferen, MSc; Joop Theelen, BASc; Mirna Ghemrawi, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:50 pm—4:10 pm **B173** **A Forensic Quantification Kit for Human and Bacterial DNA Using Nanoplate Digital Polymerase Chain Reaction**
Sylvia Etim, MS*; Bruce McCord, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)

CRIMINALISTICS

4:10 pm—4:30 pm	B174	An Evaluation of the NexGenID Software for Complex Mixture Deconvolution Using Microhaplotypes Lauren Borchert, BS*; Sarah Cavanaugh, MSFS; Daniele Podini, PhD; Andrew Feldman, PhD; Emily Kim, BS; Jeffrey Lin, MS
4:30 pm—4:50 pm	B175	Linkage Patterns of Forensically Relevant Identity SNPs and Autosomal STRs Commonly Multiplexed in Sequencing Assays Isabella George, MFS*; Megan Foley, PhD; Daniele Podini, PhD; Jamie Belrose, PhD
4:50 pm—5:10 pm	B176	The Identification and Optimization of MicroRNA Biomarkers for Predicting Body Weight and Muscularity in Forensic Samples Xiaomeng (Simone) Yang, MS*; Daja Bonilla, BSFS; Sarah Seashols-Williams, PhD; Paul Brooks, PhD; Kimberly Lettner, MFS <i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i>
5:10 pm—5:30 pm	B177	Next-Gen Solutions: Advancing the Detection of Degraded DNA in Forensics 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	B178	Impurity Profiling: A Critical Nexus of Pharmaceutical Quality and Forensic Drug Investigation Tahir Jamshaid, MPhil*
8:15 am—8:30 am	B179	Quantifying the Similarity of Chemical Spectra Hana Lee, PhD; Alicia Carriquiry, PhD*
8:30 am—8:45 am	B180	Validation in Forensic Science: Guiding Principles for the Collection and Use of Validation Data Henry Swofford, PhD*
8:45 am—9:00 am	B181	WITHDRAWN
9:00 am—9:15 am	B182	A Bug's Life: A Soft Ionization Mass Spectrometric Approach for the Species Identification of Unknown Entomological Evidence for Postmortem Interval Determination Alexa Figueroa, BS*; Robert Cody, PhD; Rabi Musah, PhD; Jennifer Rosati, PhD
9:15 am—9:30 am	B183	The Detection of Oral Fluid Stains on Fabric Via Solution Extraction Combined With Deep Ultraviolet Raman Spectroscopy Igor Lednev, PhD*; Mohamed Amin, PhD; Entesar Al-Hetlani, PhD
9:30 am—9:50 am	B184	The Fungicide Did It: False Negatives and Decreased Sensitivity of Heme Tests on a Leather Substrate Lily Manzi, BA; Allyn Schoeffler, PhD; Anna Duggar, PhD*
9:50 am—10:10 am		BREAK

CRIMINALISTICS

A Green Groundhog in Virtual Reality

Moderator: A. Bakarr Kanu, PhD, MRSC

Co-Moderator: Tiffany Rodriguez, MS

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

This Session Is Dope!

Moderator: Mikaela Romanelli, MS

Co-Moderator: Glen Jackson, PhD

- 1:00 pm—1:15 pm **B188** **That's Dope: A Novel Approach for the Differentiation of Δ^9 -THC Isomers in Cannabis**
Alleigh Couch, BS*; Emma Hardwick, BA; J. Tyler Davidson, PhD; Christopher Zall, PhD;
Christany Liggins, BS
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 1:15 pm—1:45 pm **B189** **Forensic Alcohol Testing of Jello Shots Given to Children**
Laura Labay, PhD*; Lee Blum, PhD; Michael Lamb, MS; Justine Drake, MSFS;
Nina McCullough, BA
- 1:45 pm—2:00 pm **B190** **Recent Trends in Fentanyl Adulteration: Results From the Near Real-Time Drug Checking RaDAR Program**
Edward Sisco, PhD*
- 2:00 pm—2:15 pm **B191** **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**
Stewart Walker, PhD*; Gemma Kerry, BSc; Jackie Wright, PhD; Kirstin Ross, PhD
- 2:15 pm—2:30 pm **B192** **The Detection and Quantification of Synthetic Cannabinoids and Other Novel Psychoactive Substances in Jail Contraband**
Max Denn, MS*; Nicholas Khorozov, MS; Barry Logan, PhD; Alex Krotulski, PhD;
Joshua DeBord, PhD
- 2:30 pm—2:45 pm **B193** **Resolving the "Unresolvable" Tandem Mass Spectra of the Isomers THC and CBD Using the Expert Algorithm for Substance Identification (EASI)**
Alexandra Adeoye, MS; Glen Jackson, PhD*
- 2:45 pm—3:00 pm **B194** **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**
Mikaela Romanelli, MS*
- 3:00 pm—3:15 pm **B195** **The Transacetylation of Controlled Substances in Analytical Matrices**
Bailey Davis, MPS*; Jaclyn Beshlian, MFS; Anthony Chiusano, BS; Jennifer Yung, MS;
Daniel Azevedo, BS
- 3:15 pm—3:30 pm **BREAK**

CRIMINALISTICS

You Can't Hide Your Dope From These Dogs

Moderator: Pete Ausili, MS

Co-Moderator: Mariah Carson, MSFS

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