

CRIMINALISTICS

Wednesday

Poster Session

- 11:30 AM – 1:00 PM **B1** **What's In It For Me (WIIFM)?: Streamlining Sexual Assault Evidence From Collection to Analysis to Achieve the Best Outcome for the Survivor**
*Fernanda Henry, BSc, MSc**; Joy Quinlan, BSc; Valerie Mattimore Fuller, PhD, BS;
Aliker Compton, BSc
- 11:30 AM – 1:00 PM **B2** **The Remains of the Crime: An Assessment of Body Fluid Identification Over Time**
Francisco Medina Paz, PhD; Brandon L. Kuba, BS; Emily Kryvorutsky;
*M. Gabriela Roca, MSc, PhD**; Sara C. Zapico, PhD
- 11:30 AM – 1:00 PM **B3** **Dry Vacuum Recovery of DNA From Fabric**
*Emily Sam-Zee-Moi, BS**; Mechthild Prinz, MS, PhD
- 11:30 AM – 1:00 PM **B4** **An Initial Investigation of the Applied Biosystems® SeqStudio™ Genetic Analyzer for Human Identification Purposes**
*Brayleigh Keefe, BS**; Megan Foley, MSFS; Nicole Novroski; Fabio Oldoni, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B5** **A Morphological and Genetic Characterization of the Psychoactive Species *Psilocybe Cubensis* From Forensic Samples**
*Ivana Horjan Zanki; Adela Makar, PhD; Andrea Ledić**
- 11:30 AM – 1:00 PM **B6** **The Persistence of Wearer DNA on Clothing After Laundering**
*Rachel Breitenstein, MS**; Shawn Montpetit, MS; Ismail M. Sebetan, MD, PhD*;
Paul Stein, PhD*
- 11:30 AM – 1:00 PM **B7** **A Multi-Species Reference Ladder Using Two PCR Multiplexes for the Rapid Identification of Most Domestic Animals for Forensic Purposes**
*Vallarie Ostenson, MS; Lindsey Kaufman, MS; DeEtta Mills, PhD**
- 11:30 AM – 1:00 PM **B8** **Advancing Semen Detection Techniques With Sperm Tracker STK® in Real Case Scenarios and Diverse Environments**
*Monica Omedei, PhD**; Selena Cisana, PhD; Aurora Desogus; Giorgia Ferrero; Florian Tharin;
Paolo Garofano, PhD; Eugenio Alladio
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B9** **Into the “Sexome”: Genital Microbiome Transfer and Applications**
*Julia Wang, BS, MS**; Rachel Houston, PhD; Sheree R. Hughes, BSc, PhD;
Brendan Chapman; Ruby Dixon, BS
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B10** **The Adaptation, Optimization, and Validation of a Semi-Automated DNase I-Based Differential Extraction Procedure on the Beckman Coulter Biomek NX^P Automation Workstation**
*Susan A. Greenspoon, PhD**; William Eggleston, PhD; Cathryn Shannon, BS, MS
- 11:30 AM – 1:00 PM **B11** **From Tecan to Hamilton: Material Modification of Applied Biosystems™ PrepFiler™ Automated Extraction**
*Cristina L. Servidio, MFS**; Rachel H. Oefelein, MSc; Brittany Stirmell, MSFS
- 11:30 AM – 1:00 PM **B12** **An Evaluation of the Effectiveness of Flow Cytometry in Sperm Testing in Mixed Semen Specimen**
*Fang Chun Chung**; Chun-Yen Lin; Kuan-Miao Yeh; Yeh-Lin Lu; Chun Changou

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11:30 AM – 1:00 PM	B13	An Examination of Vaginal Swab Cross-Reactivity in Presumptive Saliva Testing <i>Emily Wiesen, MS, BS*</i>
11:30 AM – 1:00 PM	B14	Mitochondrial DNA Sequencing for Forensic Human Identification in a Saudi Arabian Context <i>Dina Al Oraer, PhD*</i>
11:30 AM – 1:00 PM	B15	An Application of Chemometrics-Assisted ATR/FTIR Spectroscopy for the Identification of Human Biological Stains Exposed to Different Environmental Conditions and Estimation of the Time Since Deposition <i>Anna Barbaro, PhD*; Cristina Cano; Fernando E. Ortega-Ojeda; Carmen García-Ruiz; Gemma Montalvo</i>
11:30 AM – 1:00 PM	B16	Cellular Autofluorescence for the Determination of Time Since Deposition of Blood Samples <i>Hannah Elizabeth Lamer, BS*; Christopher Ehrhardt, PhD, BS; Catherine Cupples Connon, PhD, MSFS; Susan A. Greenspoon, PhD</i>
11:30 AM – 1:00 PM	B17	The Accuracy of Semen Presumptive Testing <i>Heather Rogers*; Rhonda Williams, PhD</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B18	The Developmental Validation Testing of the Integrated Quantifiler™ Trio-HRM Assay <i>Chastyn Smith*; Edward Boone, PhD; Tracey Dawson Green, PhD</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B19	A Qualitative Analysis of Natural, Synthetic, and Semi-Synthetic Cannabinoids in Vape Products by GC/MS <i>Mikayla Siegfried*; Joshua S. DeBord, PhD; Alex J. Krotulski, PhD; Heather L. Harris, MFS, JD</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B20	Quantifying Cannabinoids in Complex Matrices <i>Michael W. Gilbert, BS; Reta Newman, MA*</i>
11:30 AM – 1:00 PM	B21	Seized Drugs: Carrier Gas Conversion of Helium to Hydrogen for GC/MS and GC/IR Instruments <i>Cody Woltz*; Sadie Kasten*</i>
11:30 AM – 1:00 PM	B22	The Structural Characterization of Nitazene Analogs Using Electron Ionization/Mass Spectrometry (EI/MS) <i>Emma Hardwick, BA*; J. Tyler Davidson, PhD</i>
11:30 AM – 1:00 PM	B24	The Loss of Latent Fingerprint Visual Quality: Natural Degradation vs. Depletion Series <i>Josep De Alcaraz-Fossoul, PhD*</i>
11:30 AM – 1:00 PM	B25	The Optimized Separation of Cannabis Terpenes/Terpenoids Via GC/EI/MS <i>Kristina Martinet*; James V. DeFrancesco, PhD; Emma Humphreys, BS</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B26	The Quantitation of Furanocoumarins in Grapefruit Supplements Using High-Performance Liquid Chromatography <i>Nequa Griffin, MSFS*; Ellen H. Hondrogiannis, PhD</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B27	Ag-Ligand Ion Complexation: An Alternative Approach for Hemp and Marijuana Differentiation <i>Alleigh N. Couch, BS*; Jayleigh M. Lanza, BS; Christopher M. Zall, PhD; J. Tyler Davidson, PhD</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>

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- 11:30 AM – 1:00 PM **B28** **A Workflow for the Rapid Analysis of Trace Drug Residues Collected From Used Paraphernalia**
*Meghan G. Appley, PhD**; Elizabeth Robinson, MS; Edward Sisco, PhD
- 11:30 AM – 1:00 PM **B29** **A Homemade Bomb Mistaken for a Terroristic Attack: A Variety of Forensic Analyses Can Help Substantiate the Investigations**
*Irene Pradelle, MD**; Michele Carpinteri, MD; Laura Camilla Gasparini, MD; Luca Diani, MD; Giada Rovito, MD; Margherita Neri, MD PhD
- 11:30 AM – 1:00 PM **B30** **Hidden Traces: An Alternative Analytical Scheme for Seized Drug Analysis**
*J. Tyler Davidson, PhD**; Alleigh N. Couch, BS
- 11:30 AM – 1:00 PM **B31** **Matricide: When Psycho-Social Fragilities Lead to Murder**
*Laura Camilla Gasparini, MD**; Michele Carpinteri, MD; Giada Rovito, MD; Luca Diani, MD; Irene Pradelle, MD; Matteo Fabbri, PhD, MSc; Matteo Marti; Rosa M. Gaudio, MD, PhD; Raffaella Marino, MD; Letizia Alfieri, MD; Margherita Neri, MD, PhD
- 11:30 AM – 1:00 PM **B32** **Quantitation of Lysergic Acid Diethylamide (LSD) Using HPTLC**
*Tori Schaffer, BS, MSFS**; Sandra E. Rodriguez-Cruz, PhD; Jeanne R. Berk, PhD, LLB; Thomas A. Brettell, MS, PhD
- 11:30 AM – 1:00 PM **B33** **WITHDRAWN**
- 11:30 AM – 1:00 PM **B34** **The Odor Behind a Shot: Chemical Characterization of Volatiles From Ammunition**
*Salem Danielle Smith**; Paola A. Prada-Tiedemann, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B56** **Toxic Adulterant Prevalence in the United States Illicit Drug Supply: Geographical Trends and Raising Awareness Regarding Their Dangers to Promote Public Health**
*Mia Borrelli, MS, BS**; Melissa F. Hehir; Trisha Conti; Ryan Farrell; Nicole Lattanzio, MSFS; Sarah A. Shuda, MSFS; Amanda L.A. Mohr, MS; Thom Browne, MA; Barry K. Logan, PhD

Thursday

Poster Session

- 11:30 AM – 1:00 PM **B23** **The Effect of Solid Copper Bullets on Barrel Rifling Characteristics**
*Natali Hassett, BS**; Eric Law, PhD
- 11:30 AM – 1:00 PM **B35** **An Analysis of Improved Methods for the Genetic Identification of Cremated Skeletal Remains**
*Kadir Dastan**
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B36** **An Examination of the E22 Connect Fx for Extra-Large Volume DNA Extraction and Purification From Skeletal Samples**
*Jennifer L. Snedeker, BS**; Sheree R. Hughes, BSc, PhD; Rachel Houston, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B37** **The Development of a Custom qPCR Multiplex to Quantify Human and Microbial DNA**
*Miriam Foster**; Mitchell M. Holland, PhD; Jennifer McElhoe
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM **B38** **The Reassociation of Highly Degraded Human Remains Found in the East Marshall Street Well Using Insertion/Null Genotyping**
*Sierra Laveroni**; Andrea Malchow*; Daniela Frausto, MS; Michelle M. Woo, MS, BS; Baneshwar Singh, PhD; Filipa Simao; Tal Simmons, PhD

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- 11:30 AM – 1:00 PM **B39** **An Overview of Cannabis Seizures and Methods for Distinguishing Between Cannabis and Hemp in Croatia**
Slavena Cukrov Bezbradica, PhD; Lucija Barbarić, PhD; Kristina Jurković, PhD;
Adela Makar, PhD; Maja Jelena Čop, PhD; Andrea Ledić*
- 11:30 AM – 1:00 PM **B40** **An Efficient Alternative to the Conventional Bone Pulverization Step for Personal Identification in 11 Real Forensic Caseworks**
Chiara Della Rocca, PhD; Gavino Piras; Alessandro Mameli*
- 11:30 AM – 1:00 PM **B41** **Investigative Single Cell Genetics: Determining the Probability of a Genotype After Observing Single-Cell Data Enables Robust Database Searches Regardless of Mixture Complexity**
Qhawe A. Bhembe, MS; Nidhi Sheth, MS; Leah M. O'Donnell, BSc, MSc; Ken R. Duffy, PhD;
Desmond S. Lun, PhD; Catherine M. Grgicak, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 AM – 1:00 PM **B42** **Locus Abundance Variation by ForenSeq™ DNA Signature Prep Kit Lot**
Kim Eskey, MS, BS; Kyleen Elwick, PhD; Sana Enke; Claire Levy; Marie Lovett; April Manzella, BA;
Christina Scott, MS, BA; Rebecca S. Just, PhD*
- 11:30 AM – 1:00 PM **B43** **Genotyping Strategies for Tissues Fixed With Various Embalming Fluids for Human Identification, Databasing, and Traceability**
Cassidy Callaway; Madeline Ashton, BSc; Natalia Czado, BS, MSFS; Sheree R. Hughes, BSc, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 AM – 1:00 PM **B44** **The Development of a Facial Phenotype Prediction Method Using Korean 3D Craniofacial Images and SNPs**
Won Joon Lee; Joon Yeol Ryu; Hyobong Jang*; Eunseo Park; Eunsoon Shin; Sohee Cho, PhD;
Jong Eun Lee; Soong Deok Lee, MD, PhD*
- 11:30 AM – 1:00 PM **B45** **The Development of Reagents, Software, and a Database for Kinship Determination in Missing Persons, Disaster Victims, and Human Rights Violation Cases**
Gothami A. Padmabandu, MS; Joana Antunes, PhD; Sarah M. Radecke; Michaela Russo;
Erin McCarthy, BS; Juan Carlos Perez, BS; Kathryn M. Stephens, PhD*
- 11:30 AM – 1:00 PM **B46** **A 353-Plex Panel for Forensic Identification Based on Massively Parallel Sequencing Technology**
Yingying Cheng; Qiujuan Wang, PhD; Dong Li; Bowen Li; Shengjie Gao;
Kunjie Pang, MS, BS; Xianhua Jiang; Hongqi Wang; Xiaosen Guo**
- 11:30 AM – 1:00 PM **B47** **Differentiating Marijuana From Hemp Using an NGS Panel and Rapid Genotyping Assays Targeting Cannabinoid Synthase Genes**
Ya-Chih (Jessica) Cheng, MS; Rachel Houston, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 AM – 1:00 PM **B48** **Challenges of DNA Profiling After Firefighting Plane Crash: The Influence of Kerosene Biodegradation on Human Remains**
Francesco Sessa, MS, PhD; Martina Francaviglia, MD; Giuseppe Cocimano, MD;
Salvatore Rocuzzo, MD*
- 11:30 AM – 1:00 PM **B49** **The Development of a Multiplex SNP Genotyping RT-PCR Kit for Screening of Non-Koreans**
Seyoung Nam; Si-Keun Lim; Yukyoung Sin
(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 AM – 1:00 PM **B50** **The Utilization of a Single Nucleotide Variant (SNV) Panel for the Confirmation of Sample Identity in Two Clinical Genomics Applications**
Mariana Voudouri, MD; Donald Green, BS; Sophie Deharvengt; Joel Lefferts, PhD;
Wahab A. Khan, PhD; Parth Shah, MD*

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11:30 AM – 1:00 PM	B51	Examining the Risk Associated With Qualitative Exclusions in Forensic DNA Casework <i>Samantha Orans Wandzek, MS*</i>
11:30 AM – 1:00 PM	B52	STRBase Moving Forward <i>Lisa A. Borsuk*; Angela Lee; Peter Vallone, PhD</i>
11:30 AM – 1:00 PM	B53	Ten Years of Developing and Improving CSI Camps, Forensic Science Educational Conferences, and Science Museum Programs Toward Enhancing Interest, Attitudes, and Motivation in Forensic Science <i>Steven B. Lee, PhD*; Mark Okuda, MS; Bruce R. McCord, PhD; Sara C. Zapico, PhD; Sharon L. Plotkin, EdD; Margie Phipps, MS; Analisa Duran, MS; Mary Juno, MSc</i>
11:30 AM – 1:00 PM	B54	A Longitudinal Study on the Odor Stability of Decomposition Simulated Training Aids Under Freezing Conditions <i>Jonathan Bateman Locke*; Andrea Medrano, MS, BS; Paola A. Prada-Tiedemann, MS, BS; Chris Holleyman</i>
11:30 AM – 1:00 PM	B55	A Pre-Concentrating Polymer Coating for Improved Detection of Fentanyl and Fentanyl Analogs <i>Galpayage Dona Thouli Lochana Jayawardana, BSc*; Lauryn DeGreeff, PhD; Ashley Fulton, PhD; Braden C. Giordano, PhD</i>
11:30 AM – 1:00 PM	B57	An Analysis of Plant Fragments Using X-Ray Fluorescence Spectrometry and X-Ray Absorption Fine Structure Technique Utilizing Synchrotron Radiation <i>Suzuha Kurosugi*; Yoshinori Nishiwaki; Masanobu Mori</i>
11:30 AM – 1:00 PM	B58	An Analysis of Single Synthetic Fibers by Metallic Components in Dyes by Nanobeam X-Ray Fluorescence Imaging and X-Ray Absorption Fine Structure Technique Utilizing Synchrotron Radiation <i>Keita Miyazaki, BA*; Yoshinori Nishiwaki; Masanobu Mori</i>
11:30 AM – 1:00 PM	B59	The Application of the Expert Algorithm for Substance Identification (EASI) to the Mass Spectra of Various Bath Salts (Synthetic Cathinones) <i>Glen P. Jackson, PhD*; Alexandra I. Adeoye, MS; Jessica Orris, BS; Clarissa McQuain; Stephen P. Hokanson, BS</i>
11:30 AM – 1:00 PM	B60	An Assessment of a Combined Field-Portable Raman Spectroscopy and Gas Chromatography/Mass Spectrometry Approach for the Analysis of Seized Drugs <i>Christina Chang, BS*; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B61	An Assessment of Odorant Permeability for Canine Training Aid Mimics in Different Containers Utilizing HS/SPME-GC/MS <i>Kayla Hogan, BS*; Katherine Dias Castro, BS; Janet M. Crespo Cajigas, MS, BS; Lauryn DeGreeff, PhD; Kenneth G. Furton, PhD</i>
11:30 AM – 1:00 PM	B62	Color, Monogram, and Physical Measurements of Illicitly Manufactured Fentanyl Tablet Exhibits Seized Along the United States Southwestern Border <i>Joshua William Kotchey, MS, BA*; Joshua S. DeBord, PhD; Sarah A. Shuda, MSFS; Mia Borrelli, MS, BS; Amanda L.A. Mohr, MS; M.J. Menendez, JD; Thom Browne, MA; Barry K. Logan, PhD</i>
11:30 AM – 1:00 PM	B63	The Detection of Airborne Methamphetamine in Contaminated Properties and Vehicles Using Active Air Sampling With Liquid Chromatography/Mass Spectrometry (LC/MS) <i>Gemma L. Kerry*; Emma J. Kuhn, BSc, Jackie Wright, PhD; Kirstin E. Ross, PhD, BSc; Stewart Walker, PhD, BSc</i>

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11:30 AM – 1:00 PM	B64	WITHDRAWN
11:30 AM – 1:00 PM	B65	The Development of a Novel Nanocomposite Using Polypyrrole and Single-Walled Carbon Nanotubes for Headspace Solid Phase Microextraction of Alkanes in Forensic Ignitable Liquid Analysis <i>Ting-Yu Huang, MS*; Jorn Yu, PhD</i>
11:30 AM – 1:00 PM	B66	Enhanced Ignitable Liquid and Substrate Database Functionality for Improved Casework and Research <i>Michael E. Sigman, PhD*; Nikhil Prakash, MS*; Mary R. Williams, MSc; Larry Tang, PhD</i>
11:30 AM – 1:00 PM	B67	An Estimation of Dyeing Methods From Wool Single Fibers by Nanobeam X-Ray Fluorescence Imaging Utilizing Synchrotron Radiation <i>Yoshinori Nishiwaki*</i>
11:30 AM – 1:00 PM	B68	How to Minimize the Presence of Drug Residues on the Exterior of Drug Evidence Packaging After Analysis <i>Elizabeth Robinson, MS*; Edward Sisco, PhD; Rebecca Mead, MS</i>
11:30 AM – 1:00 PM	B69	The Identification and Classification of Major Cannabinoids Using Raman Microscopy, Chemometrics, and a Novel Artificial Intelligence Approach <i>John Hugo Laetsch, BS*; Jose Grijalva, MS; Ting-Yu Huang, MS; Patrick Buzzini, PhD; Jorn Yu, PhD; J. Tyler Davidson, PhD; Geraldine Monjardez, PhD</i> <i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	B70	One Gunshot Is Not Enough: A Case of Suicide by Double Gunshot Wound to the Head and a Literature Review <i>Eleonora Mezzetti, MD*; Federica Spina, MD; Laura Panata, MD; Isabella Mercurio, MD; Massimo Lancia, MD; Marco Di Paolo, MD</i>
11:30 AM – 1:00 PM	B71	The Optimization of Sample Preparation Procedures for the Determination of Δ^9-THC and It's Isomers in Seized Cannabis Oils, Concentrates, and Vapes by LC-PDA <i>Walter B. Wilson, PhD*</i>
11:30 AM – 1:00 PM	B72	WITHDRAWN

Thursday—Session I

Standards, Policies, and Surveys

Moderator: Amy Brodeur, MFS

8:45 AM – 9:00 AM	B73	Standards Development Activities in Human Forensic Biology <i>Jillian Conte, PhD*</i>
9:00 AM – 9:15 AM	B74	Human Factors in Forensic DNA Handbook Recommendations in Practice <i>Tiffany A. Roy, BS, JD, MSFS*; Sasha B. Colvin, BS*</i>
9:15 AM – 9:30 AM	B75	WITHDRAWN
9:30 AM – 9:45 AM	B76	Processing Gun Crimes in NYC: How the Department of Forensic Biology Was Able to Meet a 30-Day Turnaround Time <i>Craig O. O'Connor, PhD*; Katey Nori, MSFS</i>

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9:45 AM – 10:00 AM **B77** **A Global Survey on Activity-Level DNA Evaluative Reporting**
*Devyn Pirtle, BS**; *Mechthild Prinz, MS, PhD*; *Fabio Oldoni, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:00 AM – 10:15 AM **BREAK**

Trace and Touch DNA

Moderator: Robin Cotton, PhD

Co-Moderator: Kristy Kadash, PhD

10:15 AM – 10:30 AM **B78** **An Investigation of Handling Time on the Deposition and Persistence of Trace DNA in Pickpocket Scenarios**
*Lauren Hoopes, BS**; *Tiffany A. Kreidler, BS*; *Bas Kokshoorn, PhD*; *Fabio Oldoni, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:30 AM – 10:45 AM **B79** **An Evaluation of Transfer, Persistence, and Recovery of Touch DNA From Mobile Phones**
*Ashley J. Moo-Choy, MSc**; *Jamie E. McGregor, HBSc*; *Nicole Novroski*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:45 AM – 11:00 AM **B80** **The Design of a Protocol for Detecting Trace DNA From Skin-to-Skin Contact in a Mock Physical Assault Scenario**
*McKenna Bonn-Savage, BS**; *Bas Kokshoorn, PhD*; *Megan Foley, MSFS*; *Fabio Oldoni, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

11:00 AM – 11:15 AM **B81** **Direct PCR Amplification for Forensic DNA Profiling From Adhesive Tape-Lift Samples**
*Kevin W.Y. Chong, PhD**; *Hui Yin Tan*

11:15 AM – 11:30 AM **B82** **The Success Rate of Touch DNA**
*Jill Snyder**; *Kaitlyn M. Adams**

11:30 AM – 11:45 AM **B83** **Total Human DNA Sampling**
*Colino Neves**; *Martin Zieger, PhD*

11:45 AM – 12:00 PM **B84** **A Combined Method to Locate and Improve DNA Recovery From Fabrics**
*Makenzie Michelle Driever, BS**; *Rhonda Williams, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

12:00 PM – 1:00 PM **BREAK**

Body Fluid ID

Moderator: Charlotte Word, PhD

1:00 PM – 1:15 PM **B85** **The Identification of MicroRNAs for Forensic Biofluid Detection Using a MicroRNA Expression Profiling Method**
*Xiaomeng Yang, MS**; *Amy N. Brodeur, MFS*; *Robin W. Cotton, PhD*; *Isabel Luisa Tan Palanca, MS*
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:15 PM – 1:30 PM **B86** **A Microfluidic Approach Toward Automated Forensic Differential Extraction of DNA-Based Sexual Assault Evidence**
*Larissa L. Cunha, BS**; *M. Shane Woolf*; *Sadie Kiendzior, BS*; *Kelsey O'Neill, BS*;
Ellaha Momand, BS; *James P. Landers, PhD*

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1:30 PM – 1:45 PM	B87	A Comparative Analysis of Swabbing Solutions for Sexual Assault Evidence: The Direct Impact on Spermatozoa and DNA Recovery <i>Olivia Quinn Kassie, BS*</i> ; <i>Sarah Seashols Williams, PhD</i> ; <i>Laura Gaydosh Combs, PhD</i> (FSF Emerging Forensic Scientist Award Oral Presentation)
1:45 PM – 2:00 PM	B88	The Discovery of Additional Male-Specific Protein Markers in Semen: Potential Applications for the Processing of Sexual Assault Evidence <i>Glendon Parker, PhD*</i> ; <i>Kyle Burk, MSc</i> ; <i>Mirna Ghemrawi, PhD, MSFS</i>
2:00 PM – 2:15 PM	B89	A Portable Microfluidic System for Rapid Serological Analysis of Forensically Relevant Body Fluids <i>Taylor Grace Chambers, PhD*</i> ; <i>Larissa L. Cunha, BS</i> ; <i>Renna L. Nouwairi, BS</i> ; <i>Tiffany Layne, PhD</i> ; <i>Liam Barry, MS</i> ; <i>Rachel Flemming, PhD</i> ; <i>James P. Landers, PhD</i>
2:15 PM – 2:30 PM	B90	To Test or Not to Test for Body Fluids: The Integration of Body Fluid Identification and Direct PCR in One Workflow <i>Sara C. Zapico, PhD*</i> ; <i>Francisco Medina Paz, PhD</i> ; <i>Christian Stadler, PhD</i> ; <i>M. Gabriela Roca, MSc, PhD</i> ; <i>Santina Castriciano, BS</i>
2:30 PM – 2:45 PM	B91	The Development of a Novel Multiomic Assay for Biofluid Identification <i>Amy N. Brodeur, MFS*</i> ; <i>Angela Proctor, PhD</i> ; <i>David Korest, BS</i>
2:45 PM – 3:00 PM	B92	A Comparison of Traditional Serological Techniques and DNA Methylation for the Identification of Body Fluids <i>Mirna Ghemrawi, PhD, MSFS*</i> ; <i>Justin Frye, MSFB</i> ; <i>Lindsay Loughner Kotchey, MS</i> ; <i>Leah Nangeroni, BS</i>
3:00 PM – 3:15 PM	B93	Alternative Direct-to-Amplification Cell Lysis Techniques for Forensically Relevant Non-Sperm Cells <i>Rhea Arya*</i> ; <i>Brittany C. Hudson</i> ; <i>Tracey Dawson Green, PhD</i> (FSF Emerging Forensic Scientist Award Oral Presentation)
3:15 PM – 3:30 PM		BREAK

FIGG, Ancestry, Predictive Modeling

Moderator: Baneshwar Singh, PhD

Co-Moderator: Amelia Bussell, MSFS

3:30 PM – 3:45 PM	B94	Decoding the Ocular Region From DNA: Building Predictive Models in Forensic Contexts <i>Belen Navarro Lopez, MS*</i> ; <i>Victoria Suarez-Ulloa, PhD</i> ; <i>Ruben Martos-Fernandez, PhD</i> ; <i>Miriam Baeta Bafalluy, PhD</i> ; <i>Oscar Ibáñez Panizo, PhD</i> ; <i>Rebeca Guerrero</i> ; <i>Begoña Martínez Jarreta, MD</i> ; <i>Susana Jimenez Moreno, MD</i> ; <i>Marian M. de Pancorbo, PhD</i>
3:45 PM – 4:00 PM	B95	Targeted SNP Typing for Forensic Genetic Genealogy Using Hybridization Capture <i>Rebecca S. Just, PhD*</i> ; <i>Sana Enke</i> ; <i>Karla Y. Garcia, PSM, BS</i> ; <i>Rebecca Mitchell, PhD</i> ; <i>Michelle P. Ackermann, MS</i>
4:00 PM – 4:15 PM	B96	Genetic Ancestry of the Unidentified Human Remains From the East Marshall Street Well <i>Filipa Simao*</i> ; <i>Baneshwar Singh, PhD</i> ; <i>Tal Simmons, PhD</i>
4:15 PM – 4:30 PM	B97	Estimating the Return on Investment on Forensic Investigative Genetic Genealogy: Using the Golden State Killer and the University of Idaho Cases as Case Models <i>Ray A. Wickenheiser, DPS, MBA*</i> ; <i>Rachel H. Oefelein, MSc</i> ; <i>Swathi A. Kumar, PhD</i>

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- 4:30 PM – 4:45 PM **B98** **A Comparative Evaluation of Illumina® Global Screening Array BeadChip, Whole Genome Sequencing, and Verogen™ ForenSeq™ Kintelligence to Analyze Degraded and Low Template DNA Extracted From Semen**
*Sarah Cavanaugh, MSFS**; *Madalyn Bowers, BS*; *Robert Bever, PhD*; *Jonathan Davoren, MSc*

Thursday—Session II

Standards Development and Related Activities Strengthening Forensic Science

Moderator: Carmen Masters, MSFS

- 8:30 AM – 8:45 AM **B99** **Advances in Canine Science and the Implementation of National Standards**
*Kelvin J. Frank, PhD, MSFS**; *Kenneth G. Furton, PhD*
- 8:45 AM – 9:00 AM **B100** **Current and Future Standards Development Activities Related to the Analysis of Seized Drugs**
*Agnes D. Winokur, MS**
- 9:00 AM – 9:15 AM **B101** **Firearms and Toolmarks Standards and Best Practices: A Collaboration of the NIST OSAC and AAFS Standards Board**
*Robert M. Sanger, BA, JD**; *Xiaoyu A. Zheng, MS*
- 9:15 AM – 9:30 AM **B102** **OSAC Is Ten Years Old—What Will the Next Decade Bring?**
*Mark D. Stolorow, MS, MBA**; *John Paul Jones, BS, MBA**
- 9:30 AM – 9:45 AM **B103** **Results From an Interlaboratory Study to Evaluate Analytical Schemes in ASTM E2329—Standard Practice for Identification of Seized Drugs**
*Jeremy S. Triplett, MS, BS**; *Michael J. Salyards, PhD, MFS*; *Sandra E. Rodriguez-Cruz, PhD*; *Jeremiah Morris, BS*; *Megan Grabenauer, PhD*; *Darryl Creel, MS*
- 9:45 AM – 10:00 AM **B104** **Standards Development Activities in Trace Materials**
Celeste M. Grover, MSFS; *Sandra Koch, PhD**
- 10:00 AM – 10:15 AM **B105** **Standards Development Activities Related to Friction Ridge Examination**
*Heidi Eldridge, PhD, MS**; *Henry Swofford, PhD**
- 10:15 AM – 10:30 AM **B106** **Standards Development Activities Related to Ignitable Liquids, Explosives, and Gunshot Residue**
*Brenda B. Christy, MS**
- 10:30 AM – 10:45 AM **BREAK**

Forensic Science Principles

Moderator: Thaddeus Mostowtt, PhD

- 10:45 AM – 11:00 AM **B107** **A 2024 Update From the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG)**
*Jaclyn Iera**
- 11:00 AM – 11:15 AM **B108** **The Forensic Science Initiative (FSI): A Pathway to College and STEM Education**
*David Fisher, MS**; *Barbara Elder Weller, EdD**; *Kevin D. Belfield, PhD*; *Jacqueline L. Cusack, EdD*

CRIMINALISTICS

- 11:15 AM – 11:30 AM **B109** **What Is the Probability That a True Match Will Appear in the Top K Correlations After a Database Search?**
*Alicia Laura Carriquiry, PhD**; *Heike Hofmann, PhD*; *Blanca I. Parker, BS*; *Cathryn Barbour, BS*
- 11:30 AM – 11:45 AM **B110** **The European Network of Forensic Science Institutes (ENFSI) Guideline for the Calculation of Measurement Uncertainty in Quantitative Forensic Investigation**
*Ivo Alberink, PhD**; *Rosario García-Repetto, PhD*; *Maria Luisa Soria Sánchez, PhD*; *Jos Tóth, BSc*
- 11:45 AM – 1:00 PM **BREAK**

Fire Debris and Explosives

Moderator: Tiffany Rodriguez, MS

- 1:00 PM – 1:15 PM **B111** **A Comparison of Computational and Laboratory-Generated Fire Debris Data**
*Larry Tang, PhD**; *Mary R. Williams, MSc*; *Michael E. Sigman, PhD*
- 1:15 PM – 1:30 PM **B112** **A Fire Debris Interpretation Using Quantitative Measures of Chromatographic Features in Medium-Range Ignitable Liquids and the Use of Graphical Display to Demonstrate Data Sufficiency**
*Kelsey R. Winters, MSFS**; *Brenda B. Christy, MS*
- 1:30 PM – 1:45 PM **B113** **An Evaluation of Headspace Solid Phase Microextraction of Diesel Fuel From Cotton Swabs for Forensic Analysis**
*Ting-Yu Huang, MS**; *Jorn Yu, PhD*
- 1:45 PM – 2:00 PM **B114** **An Evaluation of Tape for the Collection of Ignitable Liquid Residues From Non-Porous and Porous Surfaces**
*Laird Jarrett**; *Cynthia J. Kaeser Tran*
- 2:00 PM – 2:15 PM **B115** **Expert and AI Opinions: Machine-Assisted Analysis of Fire Debris**
*Michael E. Sigman, PhD**; *Mary R. Williams, MSc*; *Frances A. Whitehead, MS*
- 2:15 PM – 2:30 PM **B116** **Investigating the Capability of DART®-MS for the Analysis of Common Homemade Explosives**
*Jared Estevanes, BS**; *J. Tyler Davidson, PhD*; *Geraldine Monjardez, PhD*; *Alleigh Couch, BS*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 2:30 PM – 3:00 PM **BREAK**

Drugs

Moderator: Beth Saucier Goodspeed, MS

Co-Moderator: Stephanie Armas, MS

- 3:00 PM – 3:15 PM **B117** **Combining Surface-Enhanced Raman Spectroscopy (SERS) and Paper Spray-Mass Spectrometry (PS-MS) for Illicit Drug Detection and Identification**
Sevde Dogruer Erkok, MSc; *Roxanne Gallois*; *Leon Leegwater*; *Pascal Camoiras Gonzalez, MSc*; *Arian van Asten, PhD**; *Bruce R. McCord, PhD*
- 3:15 PM – 3:30 PM **B118** **Evaluating the Sensitivity, Stability, and Cross-Reactivity of Commercial Fentanyl Immunoassay Test Strips**
*Sandra E. Rodriguez-Cruz, PhD**
- 3:30 PM – 3:45 PM **B119** **Exploring Evidence of Common Origin of Recreational Drug Exhibits by GC/MS**
*Joshua S. DeBord, PhD**; *Barry K. Logan, PhD*; *Alex J. Krotulski, PhD*

CRIMINALISTICS

- 3:45 PM – 4:00 PM **B120** **GC Derivative VUV Spectroscopy of JWH-018 Positional Isomers and Select Synthetic Cannabinoid Diastereomers**
Annika Dombrowski, BS; Ira Saul Lurie, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 4:00 PM – 4:15 PM **B121** **The Effect of Spectral Intensity on Mass Spectral Discrimination of Fentanyl Positional Isomers**
Isaac C. Willis, BS; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 4:15 PM – 4:30 PM **B122** **The Classification of Cannabinoids Using Mass Spectral Data for the Identification of Novel Synthetic Cannabinoids**
Kristopher Charles Evans-Newman, AAS; Nuwan T. Perera, PhD; Garion Schneider*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 4:30 PM – 4:45 PM **B123** **A Qualitative and Quantitative Analysis of Particulate Spread During Simulated Illicit Drug Manufacturing: Implications for Collection of Evidence and Crime Scene Safety**
Edward Sisco, PhD; Matthew Staymates, MS; Luis E. Arroyo, PhD*

Friday—Session I

Challenging Samples

Moderator: Sheree Hughes, PhD

- 9:00 AM – 9:15 AM **B124** **Streamlining the Extraction of Challenging Samples Using the HID NIMBUS® Presto**
Kayli Carrillo, BS; Jennifer Snedeker, BS; Natalia Czado, BS, MSFS; Sheree R. Hughes, BSc, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 9:15 AM – 9:30 AM **B125** **The Effects of Oily Contaminants on DNA Extraction Efficiency Using DNA IQ™**
Elizabeth Grace Gillece, BS; Susan A. Greenspoon, PhD; William Eggleston, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 9:30 AM – 9:45 AM **B126** **The Development of a Method for Complete Collagenase I Digestion of *Bos Taurus* Bone Samples**
Reilly Elizabeth Price, BA; Ciara Rhodes, BS; Sarah Seashols Williams, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 9:45 AM – 10:00 AM **B127** **A Simple Tooth Preparation Method for the Applied Biosystems® RapidHIT™ ID Instrument**
Morgan Elizabeth Eaton, BS; Shane Woolf, MSFS, PhD; Samyuktha Pemmasani; Tracey Dawson Green, PhD*
- 10:00 AM – 10:15 AM **B128** **The Application of Ancient DNA Methodologies to Badly Burned Forensic Samples**
Cody E. Parker, PhD; Amber Coffman, BS; Erin M. Rawls, BS; Adam B. Rohrlach, PhD; Katelyn L. Bolhofner, PhD; Laura C. Fulginiti, PhD; Giovanna Vidoli, PhD; Joanne Devlin, PhD; Sree Kanthaswamy, PhD; Robert F. Oldt, BS; Anne Stone, PhD*
- 10:15 AM – 10:30 AM **B129** **A DNA Analysis of Degraded Skeletal Remains Obtained From the Petrous Bone, Tooth, Femur, Tibia, and Humerus: A Comparison Study**
*Kadir Dastan**
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 10:30 AM – 10:45 AM **BREAK**

CRIMINALISTICS

Probabilistic Genotyping

Moderator: Kelly Knight, MS

- 10:45 AM – 11:00 AM **B130** **Comparing Likelihood Ratios of Degraded DNA Mixture Profiles Using DNA-View® Mixture Solution™**
*Cameron Filipe, MSFS, BSFS**; Charles H. Brenner, PhD; Robin W. Cotton, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 11:00 AM – 11:15 AM **B131** **A Picture Is Worth 10,000 LR's: The Evaluation and Implementation of Tools to Improve Interpretation and Reporting of Mixtures Using Probabilistic Genotyping**
*Tim Kalafut, PhD**; Michael Coble, PhD
- 11:15 AM – 11:30 AM **B132** **A Comparison of the Two Most Widely Used Probabilistic Genotyping Systems Supports Accuracy and Concordance**
*Susan A. Greenspoon, PhD**; Brad Jenkins, BA, MS; Lisa Schiermeier-Wood, BS, MS
- 11:30 AM – 11:45 AM **B133** **Beyond STRs: A Snippet Into the Challenges of Interpreting iiSNPs**
*Kevin Cheng, PhD, MSc**; Jo-Anne Bright, PhD
- 11:45 AM – 1:00 PM **BREAK**

Next Generation Sequencing

Moderator: Pamela Marshall, PhD

- 1:00 PM – 1:15 PM **B134** **An Evaluation of the FORCE Panel on Alternative Reference Materials**
*Sophie S. Lee, BS**; Lindsay Loughner Kotchey, MS; Leah Nangeroni, BS;
Kimberly Sturk Andreaggi, PhD; Charla Marshall, PhD; Mirna Ghemrawi, PhD, MSFS
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 1:15 PM – 1:30 PM **B135** **Variant Allele Characterization in STR Markers Using Next Generation Sequencing**
*Becky Steffen, MS**; Lauren Mullen, BS; Grace M. Finch; Katherine Gettings, PhD;
Kevin Kiesler, MS
- 1:30 PM – 1:45 PM **B136** **Streamlining Degraded Sample Processing in Forensic Laboratories: Developing a Decision Tree for Capillary Electrophoresis and Next Generation Sequencing Platforms**
*Rachel Houston, PhD**; Natalia Czado, BS, MSFS; Damani Johnson, BS;
Lucio Avellaneda, BS; Cesar E. Cantu, BS; Sheree R. Hughes, BSc, PhD
- 1:45 PM – 2:00 PM **B137** **Maximum Recovery of DNA From Degraded Remains**
*Erin M. Rawls, BS**; Matthew V. Emery, PhD; Amber Coffman, BS; Stevie Winingear, BS, MS;
Amanda Wissler, PhD; Katelyn L. Bolhofner, PhD; Jane E. Buikstra, PhD;
Laura C. Fulginiti, PhD; Adam B. Rohrlach, PhD; Cody E. Parker, PhD; Anne Stone, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 2:00 PM – 2:15 PM **B138** **An Assessment and Validation of the IDseek® mYSTR Reverse Complement PCR Technology for Y-Chromosomal STR Profiling Utilizing the MiSeq® FGx System**
*Lindsay Loughner Kotchey, MS**; Brian Young, PhD; Leah Nangeroni, BS;
Mirna Ghemrawi, PhD, MSFS
- 2:15 PM – 2:30 PM **B139** **Visualizing Sequencing Artifacts in ForenSeq™ NGS Data**
*Yao-Yuan Liu**; Kevin Cheng, PhD, MSc; Jo-Anne Bright, PhD

CRIMINALISTICS

2:30 PM – 2:45 PM **B140** **Expanding the STRSeq BioProject to Support Sequenced-Based STR Nomenclature**
*Lauren Mullen, BS**; *Katherine Gettings, PhD*; *Lisa A. Borsuk*
(FSF Emerging Forensic Scientist Award Oral Presentation)

2:45 PM – 3:00 PM **B141** **An Exploration of a Sequence-Specific Stutter Model for STR Analysis in Next Generation Sequencing**
*Damani Johnson, BS**; *Tim Kalafut, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:00 PM – 3:15 PM **BREAK**

DNA Potpourri

Moderator: Fabio Oldoni, PhD

3:15 PM – 3:30 PM **B142** **Using the Chelation Filtration Method to Improve DNA Profile Recovery From Fired Cartridge Casings (FCCs) Prior to DNA Processing**
*Karin A. Crenshaw; Ariana Harrison, MS**; *Bruce R. McCord, PhD*

3:30 PM – 3:45 PM **B143** **Evaluation of Single Cells Produces Highly Informative Forensic Comparisons Across Multifarious Admixtures**
*Catherine M. Grgicak, PhD**; *Desmond S. Lun, PhD*; *Nidhi Sheth, MS*; *Liliana Berrios, BS*;
Ken R. Duffy, PhD

3:45 PM – 4:00 PM **B144** **Discovering the Mysteries About Degradation of Extracted DNA Stored in Different Conditions: Updates After 400 Days of Testings**
*Noemi Procopio, PhD, MSc**; *Luciano Garofano, PhD**; *Giulia Squazzi, MA, BA*;
Selena Cisana, PhD; *Paolo Garofano, MD, PhD*; *Pasquale Linarello*; *Monica Omedei, PhD*;
Luca Salvaderi, BSc; *Sarah Gino, MD*

4:00 PM – 4:15 PM **B145** **Understanding the Stability of Environmental DNA (eDNA) From Four Biological Taxa and Their Association With Soil and Dust Evidence**
*Teresa Tiedge, MPS**; *Kelly A. Meiklejohn, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

4:15 PM – 4:30 PM **B146** **A New Method for Determining Time-Since-Deposition of DNA Samples Containing Saliva and/or “Touch” Epidermal Cells**
*Thilini M. Chandrasekara, BSc**; *Dillon S. Ryder*; *Susan A. Greenspoon, PhD*;
Christopher Ehrhardt, PhD, BS

4:30 PM – 4:45 PM **B147** **A Biological Survey of Nucleated vs. Non-Nucleated Epithelial Cells Within Touch DNA Samples Using Autofluorescence Profiling**
*Wanyan Cai**; *Sarah Seashols Williams, PhD*; *Amanda E. Gentry, PhD*;
Christopher Ehrhardt, PhD, BS

CRIMINALISTICS

Friday—Session II

Crime Scene and GSR

Moderator: Kathryn Chabaud, PhD

- 9:00 AM – 9:15 AM **B148** **Proactive Crime Scene Response Improves Criminal Investigations**
*Ray A. Wickenheiser, DPS, MBA**
- 9:15 AM – 9:30 AM **B149** **An Interagency Study of Scene Investigation Using Virtual Reality (VR) Tools**
Jaclynn McKay, BS; Kelly Keyes, BS; John H. Grassel, MS; Edward Hill, BS;
Nicholas Thomas, PhD, MPH*
- 9:30 AM – 9:45 AM **B150** **The Presence of Inorganic Gunshot Residue (iGSR) in Police Vehicles: A Study at the Zagreb County Police Administration in Croatia**
Sunčica Kuzmić, MChE; Hrvoje Senjes, MS; Ivan Jerković, PhD, MSc*
- 9:45 AM – 10:00 AM **B151** **The Prevalence of GSR and the Mitigating Quality Procedures at Harris County Institute of Forensic Sciences**
Brittany S. Claassen, MS; Audrey Pless; Leslie A. Dixon, BS; Jason L. Schoeder, MS, MBA
(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 10:00 AM – 10:15 AM **B152** **Utilizing Gas Chromatography/Mass Spectrometry (GC/MS) to Determine the Effect of Solvent Extraction Parameters on Forensic Smokeless Powder Analysis**
Leighann Rose Weber, BS; Kelli A. Simon, PhD; Ryan Bain, PhD; Eric Hazelrigg, MS
(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 10:15 AM – 10:30 AM **BREAK**

Firearms

Moderator: Theron Fussell, BA

- 10:30 AM – 10:45 AM **B153** **Advancements in 3D Technology and Virtual Comparison Microscopy for Ballistic Identification**
*Logan Eickhoff, BS, BA**
- 10:45 AM – 11:00 AM **B154** **Feature Similarity (FS) and Congruent Matching Features (CMF) Methods for Comparison of Impressed Toolmarks in Firearm Evidence Identification**
*Junfeng J. Song, PhD**
- 11:00 AM – 11:15 AM **B155** **The Impact Behavior of 9mm Jacketed Hollow Point Bullets on Laminated Glass**
Zoe Timothy, BS; Michael Kusluski, MFS
(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 11:15 AM – 11:30 AM **B156** **The Interoperability of Firearm Toolmark 3D Measurements on Objective Similarity Metrics**
Xiaoyu A. Zheng, MS; Johannes Soons, PhD; James Yen, PhD*
- 11:30 AM – 11:45 AM **B157** **The Effect of Gunshot Angle of Incidence on Distance Determination**
Alexander W. Jason, MSFS; Andres Marco, PhD, MS*
- 11:45 AM – 1:00 PM **BREAK**

CRIMINALISTICS

Friction Ridge and Canines

Moderator: Stephanie Armas, MS

- 1:00 PM – 1:15 PM **B158** **WITHDRAWN**
- 1:15 PM – 1:30 PM **B159** **Interdigital Frequencies of Pattern Types and Their Arrangements as a Key to Palm Print Identification**
*Angela Tonietto, MS**; *Jemima Santos*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 1:30 PM – 1:45 PM **B160** **Toward Consistency in Latent Print Examiners' Naming Conventions and Minutiae Frequency Estimations**
*Adele Quigley-McBride, PhD**; *Heidi Eldridge, PhD, MS**; *Brett Gardner, PhD**
- 1:45 PM – 2:00 PM **B161** **Not Everything Is as It Seems: The Importance of Minutiae**
*Julia Lazzari, MD**; *Giulia Berneschi, MD**; *Chiara Casula, MD*; *Arianna Baronti, MD*;
David Forni, MD; *Aniello Maiese, PhD*; *Andrea Scatena, MD*
- 2:00 PM – 2:15 PM **B162** **Dog Bites or Knife Wounds? A Case Report of Atypical Neck Injuries**
*Eulalie Pefferkorn**; *Fabrice Dedouit, MD, PhD*; *Frederic Savall, MD, PhD*; *Agathe Bascou, MD*;
Norbert Telmon, MD, PhD; *Pauline Saint Martin, PhD*
- 2:15 PM – 2:30 PM **B163** **Odor Contamination in Explosive Canine Training Aids and Steps Toward Contaminant Mitigation Through Off-Gassing**
*Katherine Dias Castro, BS**; *Lauryn DeGreeff, PhD*; *Tyler Roberts*; *Reagan M. Bridges*;
Monica Lopez; *Jordi Cruz Sanchez*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 2:30 PM – 2:45 PM **B164** **An Improved Analysis of Nylon Microplastic Trace Evidence Through Enhanced Signal-to-Noise Ratio in Room-Temperature Fluorescence Spectroscopy**
*Noah Michael Froelich, MS, BS**; *Andres D. Campiglia, PhD*
- 2:45 PM – 3:00 PM **BREAK**

Trace Evidence, Fibers, Soil, Paint, and Footwear

Moderator: Agnes Winokur, MS

- 3:00 PM – 3:15 PM **B165** **An Evaluation of a Comprehensive Raman Spectral Library for the Identification of Soil Minerals**
*Jasmine Kaur**; *Chase Notari, MS*; *Brooke W. Kammrath, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 3:15 PM – 3:30 PM **B166** **Pigment Identification in Solution-Dyed Fibers**
*Christopher S. Palenik, MS, PhD**; *Kelly Beckert, MS, BS*; *Otyllia Abraham, MS, BS*;
Ethan Groves, BS; *Skip Palenik, BS*
- 3:30 PM – 3:45 PM **B167** **Polarized Light Microscopy of Vegetable Fibers**
*Walter Frederick Rowe, PhD**

CRIMINALISTICS

- 3:45 PM – 4:00 PM **B168** **The Application of Particle-Correlated Raman Spectroscopic Analysis of Soils to Mock Casework Scenarios**
Samantha Gong, BS; Brooke W. Kammrath, PhD; Marisia A. Fikiet, PhD; Peter R. De Forest, DCrim*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 4:00 PM – 4:15 PM **B169** **The Capabilities and Limitations of Particle-Correlated Raman Spectroscopy (PCRS) for the Analysis of Forensic Soil Minerals**
Jasmine Kaur; Joshua Christensen*; Ethan Groves, BS; Skip Palenik, BS; Christopher S. Palenik, MS, PhD; Peter R. De Forest, DCrim; Marisia A. Fikiet, PhD; Virginia M. Maxwell, DPhil, BSc; Brooke W. Kammrath, PhD*
- 4:15 PM – 4:30 PM **B170** **The Differentiation of Architectural Paint by Sheen Using Reflectance Spectroscopy**
Alethea Nicole Morris, BS; Lawrence Quarino, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 4:30 PM – 4:45 PM **B171** **The NIST Footwear Impression Comparison System**
Steven Lund, PhD; Sourabh Yelluru, MS; Adam Pintar, PhD; Hariharan Iyer, PhD*

Saturday

Cannabis and Hemp

Moderator: Agnes Winokur, MS

- 9:00 AM – 9:15 AM **B172** **An Investigation of Extraction Protocols for the Analysis and Quantitation of Cannabinoids in Gummy Matrices Using Liquid Chromatography and Photodiode Array/Ultraviolet Detection**
Haley Jensen, BS; Aaron Urbas, PhD; Walter B. Wilson, PhD; Ira Saul Lurie, PhD*
- 9:15 AM – 9:30 AM **B173** **The Development of a Δ^9 -THC Colorimetric Breathalyzer Using 3D Printing Manufacture**
Wagner Pacheco, PhD; Igor Coreixas, MSc; Rafael Dornellas, PhD; Savanah Allinson; Shakyrah Golden; Justin L. Poklis, BS; Emanuele Alves, PhD*
- 9:30 AM – 9:45 AM **B174** **Then vs. Now vs. the Future: An Overview of Extraction Protocols for Cannabis-Derived and Cannabinoid-Infused Products and the Development of a Universal Extraction Method**
Benedetta Garosi, BS; Rabi A. Musah, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 9:45 AM – 10:00 AM **B175** **Trace Metals in Cannabis Seized by Law Enforcement in Ghana and Multivariate Analysis to Distinguish Among Different Cannabis Farms**
Edward Bentil, MPhil, BSc; Brian Eckenrode, PhD, Isaac Ayensu, PhD, Joseph Adu, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 10:00 AM – 10:15 AM **B176** **Are Smokable Hemp Products Correctly Labeled?**
Walter B. Wilson, PhD; Aaron Urbas, PhD*
- 10:15 AM – 10:30 AM **B177** **The Application of the Expert Algorithm for Substance Identification (EASI) to Resolve THC and CBD ESI-Mass Spectra**
Alexandra I. Adeoye, MS; Jacob King, BS; Glen P. Jackson, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)