

# YFSF POSTER SESSION

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**Wednesday**

## Poster Session

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- 11:30 am – 1:00 pm      **Y1**      **Assessing the Accuracy and Precision of Crime Scene Measurements Obtained From Apple LiDAR Scans**  
*(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 am – 1:00 pm      **Y2**      **Utilizing Honey Bees (*Apis Mellifera*) as a Surveillance and Monitoring Technique for Bacterial Pathogens in Specific Environments**  
*Jordan Walter, BSc\*; James Creecy, PhD*
- 11:30 am – 1:00 pm      **Y3**      **Human Profiling: The Application of the Oral Microbiome in the Prediction of Geographic Origin**  
*Nengi Ogbanga, PhD\*; Andrew Nelson, PhD; Darren Smith, PhD; Noemi Procopio, PhD*
- 11:30 am – 1:00 pm      **Y4**      **Understanding Postmortem Changes in the Porcine Muscle Metabolome for Postmortem Interval Estimation**  
*Maria Elena Chiappetta, MSc\*; Sara Locorriere, BSc; Peter Cross, MSc; Andrea Bonicelli, PhD; Noemi Procopio, PhD*
- 11:30 am – 1:00 pm      **Y5**      **The Rearing and Forensic Use of *Calliphora Vomitoria* Blow Fly Larvae**  
*Isabelle Cucinotta, BS\*; Heather Coyle, PhD*
- 11:30 am – 1:00 pm      **Y6**      **Psychiatry Resident Compliance With the Informed Consent Process for Voluntary Psychiatric Hospitalization**  
*Cecilia Zemanek, MD\*; James Knoll, MD*
- 11:30 am – 1:00 pm      **Y7**      **Detecting Peri- and Post-Menopausal Bone Changes Utilizing Micro-CT for Forensic Anthropology**  
*Theresa De Cree, MS\*; Shelby Garza, MA; Emily Brooks, MS; Emma Giacomello, MA (FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 am – 1:00 pm      **Y8**      **Breaking the Silence: A Study of the Efficacy of Diverse Interrogation Methods**  
*Rayna Yang\**
- 11:30 am – 1:00 pm      **Y9**      **Visualizing Risk Factors of Missingness: How Spatial Software Can Illuminate Structural Violence**  
*Sarajane Smith-Escudero, BA\*; Jesse Goliath, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 am – 1:00 pm      **Y10**      **Gendered Language Discourse in Forensic Sciences Proceedings**  
*Samantha Unwin, BA\*; Samantha Blatt, PhD; Jose Sanchez, BS; Elizabeth Redd, PhD*
- 11:30 am – 1:00 pm      **Y11**      **A Quantitative Analysis of Explosive Taggants in Forensic Samples Using Total Vaporization-Headspace/Gas Chromatography/Mass Spectrometry (TV- HS/GC/MS)**  
*Alexis Hecker, MS\*; John Goodpaster, PhD; Jacqueline Boulet*
- 11:30 am – 1:00 pm      **Y12**      **Fingerprint Age Determination Using Spectrometry Imaging by Analyzing and Comparing the Degradation of Specific Compounds Within the Fingerprint Residue in Crime Scene and Surrounding Areas**  
*Esmael Mahmud, BSc\**

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- 11:30 am – 1:00 pm    **Y13**    **Non-Human Proxies in Human Skeletal Research: Some Sampling and Treatment Considerations**  
*Dakota Bell, MS\*; Luis Cabo, MS; Francisco Medina Paz, PhD; Sara C. Zapico, PhD; Joe Adserias-Garriga, PhD*
- 11:30 am – 1:00 pm    **Y14**    **To Scale or Not to Scale: The Accuracy and Impact Behind Scaling Three-Dimensional (3D) Models**  
*Ashley Paris, BS\*; Micki Besse, MS; Savanna Agilar, MS; Heather Walsh-Haney, PhD*
- 11:30 am – 1:00 pm    **Y15**    **A Composition of Decomposition in Three Varying Conditions Involving Body Coverage Using Pig Carcasses**  
*Greta Zahn, BA\*; Teja Vayuvegula, BAS; Emily Rancourt, MSFS; An-Di Yim, PhD; Joseph Dizinno, DDS*
- 11:30 am – 1:00 pm    **Y16**    **Designing Cerium-Doped Copper Oxide-Based Nanozymes for Microfluidic Sensing of Pesticides**  
*Aditi Kishor Dhamne, MSc\**
- 11:30 am – 1:00 pm    **Y17**    **An Evaluation of Optimal Pretreatment and Quantitative Method Pairings for the Analysis of GC/MS Data From Weathered Gasoline**  
*Grace Boyer\*; Mary Gregg, PhD*
- 11:30 am – 1:00 pm    **Y18**    **Integrating Machine Learning and ATR/FTIR Spectroscopy for Geographical Origin Identification to Combat Illegal Wood Trafficking**  
*Akanksha Sharma, MS\*; Vishal Sharma, PhD*
- 11:30 am – 1:00 pm    **Y19**    **Optimizing OdoPlex Primers for Use in Pennsylvania Elk**  
*Tianna Warner, BS\*; Mitchell Holland, PhD; Nicole Chinnici, DHSc; Jason Brooks, PhD*
- 11:30 am – 1:00 pm    **Y20**    **An Investigation Into the Feasibility of ICP/OES With Discriminant Function Analysis for the Forensic Characterization of Red Lipstick Samples**  
*Caroline Wisler, BS\*; Ellen Hondrogiannis, PhD*
- 11:30 am – 1:00 pm    **Y21**    **Transforming Bioarchaeology: Computer Vision for Sex Identification in Skeletal Remains**  
*Kate Collette, BA\**
- 11:30 am – 1:00 pm    **Y22**    **Investigating the Limits of Low-Input DNA Libraries for Genome Sequencing of *Cryptosporidium***  
*Katherine Hshieh, BS\*; Jenny Maloney, PhD; Aleksey Molokin, MSc*
- 11:30 am – 1:00 pm    **Y23**    **A Civil War Field Hospital: STR Analysis of Samples Collected From a Bloody Surgical Table**  
*Alyssa Spillar, BS\*; Natalie Spencer, BS; Kristin Mossé, MS; J. McClintock, PhD*
- 11:30 am – 1:00 pm    **Y24**    **Cartridge Casings in Forensic Science: An Analyzation and Comparison of Cartridge Casings Fired From Unknown and Known Firearms**  
*Anna Sommerville, BS\*; Kristin Mossé, MS*
- 11:30 am – 1:00 pm    **Y25**    **Pen Ink Analysis Via Raman Spectroscopy**  
*Alex Potter, BSc\*; Ellen Hondrogiannis, PhD; Mary Sanjini Devadas, PhD*
- 11:30 am – 1:00 pm    **Y26**    **A Gas Chromatography/Mass Spectrometry and Pyrolysis Gas Chromatography/Mass Spectrometry Analysis of Lubricant and Spermicide in Condoms and Personal Lubricants**  
*Laura Cross\**

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11:30 am – 1:00 pm	<b>Y27</b>	<b>Evaluating the General Acceptance of Race-Neutral Statistical Analyses of CODIS Loci</b> <i>Isabelle Reed*</i> ; <i>James Creecy, PhD</i>
11:30 am – 1:00 pm	<b>Y28</b>	<b>Utilizing Fragmentation of the Gentueri CollectEject Swab for CODIS Upload</b> <i>Hannah Schaeffer, BS*</i> ; <i>Pamela Marshall, PhD</i> (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 am – 1:00 pm	<b>Y29</b>	<b>Evaluating the Reliability of the Megyesi Total Body Scoring Method on People of Color</b> <i>Eliana Gutierrez, MA*</i> ; <i>Danny Wescott, PhD</i>
11:30 am – 1:00 pm	<b>Y30</b>	<b>The Characterization and Quantification of Cell-Free DNA in Touch Samples</b> <i>Veronica Poole*</i> ; <i>Michael Marciano, PhD</i>
11:30 am – 1:00 pm	<b>Y31</b>	<b>A Robustness Analysis of High-Dimensional Consensus (HDC) Mass Spectra in Forensic Drug Identification</b> <i>Briana Capistran, PhD</i> ; <i>Wencheng Zhong, MEng*</i> ; <i>Amudhan Krishnaswamy Usha, PhD</i> ; <i>Anthony Kearsley, PhD</i>
11:30 am – 1:00 pm	<b>Y32</b>	<b>Maximum Likelihood Techniques for Discriminating Mass Spectra of Isomers</b> <i>Amudhan Krishnaswamy Usha, PhD*</i> ; <i>Briana Capistran, PhD</i> ; <i>Anthony Kearsley, PhD</i>
11:30 am – 1:00 pm	<b>Y33</b>	<b>The Persistence of Trace DNA Samples in a Carjacked Scenario</b> <i>Daniel Leitholf, BS*</i> ; <i>Bas Kokshoorn, PhD</i> ; <i>Fabio Oldoni, PhD</i> (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 am – 1:00 pm	<b>Y34</b>	<b>The Effect of Ethanol on GHB UDP-Glucuronosyltransferase Activity</b> <i>Julie Loison, BS*</i> ; <i>Robert Powers, PhD</i>
11:30 am – 1:00 pm	<b>Y35</b>	<b>Problematic Exclusionary Differences: The Tyranny of Universal Standards for Determining Exclusionary Differences</b> <i>Janean Hanka, MS*</i> ; <i>JoAnn Buscaglia, PhD</i> ; <i>Jack Hietpas, PhD</i> ; <i>Danica Ommen, PhD</i> ; <i>Christopher Saunders, PhD</i>
11:30 am – 1:00 pm	<b>Y36</b>	<b>An Investigation of the Impact of the Fire Debris Sample Extraction Process on Latent Fingerprints</b> <i>Hope Hardman, BS*</i> ; <i>Robyn Lewis, BS</i> ; <i>Derek Hardy, BA</i> ; <i>Kimberly Kunkler, PhD</i>
11:30 am – 1:00 pm	<b>Y37</b>	<b>Using Historical Biocultural Variables and Vitamin D Deficiency to Assist With Biological Profiles</b> <i>Kristy Henson, MS*</i>
11:30 am – 1:00 pm	<b>Y38</b>	<b>The Impact of Different Environments on DNA Degradation in Decomposing Mammalian Specimens</b> <i>McKenzie Lamm*</i> ; <i>Kristy Henson, MS</i>
11:30 am – 1:00 pm	<b>Y39</b>	<b>An LC/MS/MS Analysis of Novel Psychoactive Arylcyclohexylamines in Blood</b> <i>Sean Lordo, BS*</i> ; <i>Sara Walton, MS</i> ; <i>Michael Truver, PhD</i> ; <i>Alex Krotulski, PhD</i> ; <i>Anthony Costantino, PhD</i>
11:30 am – 1:00 pm	<b>Y40</b>	<b>Investigating the Ability to Generate DNA Profiles From Swabs of the Body Surface Utilizing Rapid DNA Technology: A Pilot Study</b> <i>Nicole Clayton, BS*</i> ; <i>Kaitlyn Glavee, BA</i> ; <i>Krista Latham, PhD</i> ; <i>Jami Sego, MS</i> ; <i>Stephen Nawrocki, PhD</i>

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- 11:30 am – 1:00 pm    **Y41**    **The Development of a Quantitative Method for the Analysis of Illicit and Novel Benzodiazepines in Tablets Using Ultra-Performance Liquid Chromatography Coupled With Triple Quadrupole Mass Spectrometry**  
*Brielle Etze, BS\*; Joshua DeBord, PhD; Alex Krotulski, PhD; Heather Harris, JD*
- 11:30 am – 1:00 pm    **Y42**    **DNA in Drugs: An Interdisciplinary Approach to Identify Drugs and the DNA Within**  
*Jaycie Esteban, BS\*; Lindsay Kotchey, MS; Joshua DeBord, PhD; Joshua Kotchey, MSFS; Fabio Oldoni, PhD; Heather Harris, JD*
- 11:30 am – 1:00 pm    **Y43**    **LC/QqQ/MS Method Development and Validation for the Quantitative Analysis of Drugs and Their Metabolites in Postmortem Blood**  
*Allison Blocker, BS\*; Amanda Mohr, MS; Brittany Casey, PhD; Anthony Costantino, PhD*
- 11:30 am – 1:00 pm    **Y44**    **A 12-Month Study on the Storage Conditions of Ignitable Liquids on Carbon Strips Used for Forensic Fire Debris Analysis**  
*Imani Peat\*; Amanda Burkhart, PhD*
- 11:30 am – 1:00 pm    **Y45**    **An Analysis of Locally Purchased  $\Delta 8$ -Tetrahydrocannabinol Products Via Gas and Liquid Chromatography**  
*Austin Vest\*; Amanda Burkhart, PhD*
- 11:30 am – 1:00 pm    **Y46**    **An Investigation of DNA Contribution From Trace Samples Recovered From a Hammer Used in a Simulated Assault Scenario**  
*Hope Rozycki, BS\*; Bas Kokshoorn, PhD; Mechthild Prinz, PhD; Fabio Oldoni, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 am – 1:00 pm    **Y47**    **The People Who Do Forensic Anthropology: Inferences From Interviews With Ten Forensic Anthropologists**  
*Valerie Arroyo, BA\**
- 11:30 am – 1:00 pm    **Y48**    **Mapping Mortality: A Decade's Review of Drug Usage in Maryland (2014–2024)**  
*Nicholas Boire, MD\*; Stephanie Dean, MD; Rebecca Phipps, PhD*
- 11:30 am – 1:00 pm    **Y49**    **Forensic Analysis of PDFs: The Role of Peritus in Standardization and Reproducibility**  
*Dineusa Maria do Amaral\*; Cristiane Barbosa\**
- 11:30 am – 1:00 pm    **Y50**    **Echoes of a Shotgun: Unraveling the Forensic and Clinical Mystery of Multiple Gunshot Wounds in a 26-Year-Old Male**  
*Treasa James, MBBS\*; Akhilesh Pathak, MD*

## Thursday

### Poster Session

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- 11:30 am – 1:00 pm    **Y51**    **An Assessment of Postmortem Interval by Analyzing Cellular Changes in Bone Marrow in Autopsy Cases: An Observational Study**  
*Treasa James, MBBS\*; Akhilesh Pathak, MD*
- 11:30 am – 1:00 pm    **Y52**    **The Extraction, Amplification, and Analysis of Human DNA Recovered From Carrion Larvae and Adult Flies (*Sarcophaga Bullata*)**  
*Katie Long, BS\*; Kristy Henson, MS*

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- 11:30 am – 1:00 pm      **Y53**      **CODIS-Eligible DNA Collection From Sexual Assault Victims**  
*Ella Noha\**; Abimbola Famurewa, MPH; Jenny Black, BSN; Rebecca Vieh, MS;  
Nancy Downing, PhD
- 11:30 am – 1:00 pm      **Y54**      **Age Dynamics in the Violence Reporting and Examination Process for Female Victims in Santa Catarina, Brazil (2021–2024)**  
*Ingrid Knochenhauer de Souza Mendes, MEng\**; Túlio Leal Corrêa
- 11:30 am – 1:00 pm      **Y55**      **The Early Identification of Respiratory Illnesses in Infants/Children in Medicolegal Death Investigation Practice**  
*Carletta Dunn, MS\**
- 11:30 am – 1:00 pm      **Y56**      **Analyzing the Photo-Oxidation Effects of UV on the Optical Properties and Vibrational Spectra of Synthetic Fibers**  
*Vicky Wang, BS\**; Walter Rowe, PhD  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 am – 1:00 pm      **Y57**      **A Comparison of Confiscated Vaping Products From Virginia Schools From 2019–2020 to 2022–2024**  
*Meredith Buckmire\**; Kelsey Moss, BS; Alaina Holt, PhD; Ashleigh Outhous, MS;  
Justin Poklis, BS; Caroline Cobb, PhD; Michelle Peace, PhD
- 11:30 am – 1:00 pm      **Y58**      **Fetal Pig Decomposition in Western Pennsylvania: A Characterization of Burial Environment and the Decomposition Process in a Western Pennsylvania Non-Human Outdoor Decomposition Facility**  
*Dakota Dickerson, BA\**
- 11:30 am – 1:00 pm      **Y59**      **A Novel Technique to Identify Impurities Recovered With DNA Swabbing From Unfired Brass Ammunition**  
*AJ Troyer, BSFS\**; Desiree Bliss, BS; Sangeetha Balabhadra, PhD; Khalid Lodhi, DSc
- 11:30 am – 1:00 pm      **Y60**      **A Comprehensive Study of 3D Scanning and Mapping Technology in Forensic Investigations: Accuracy, Efficiency, and Volume**  
*Emma Mancuso, BS (expected May 2025)\**; Jessica Abbott, PhD
- 11:30 am – 1:00 pm      **Y61**      **Using the Truncated Normal Distribution for Value of Evidence in the Forensic Identification of Source Problems**  
*Dylan Borchert, MS\**; Semhar Michael, PhD; Christopher Saunders, PhD
- 11:30 am – 1:00 pm      **Y62**      **A Qualitative and Quantitative Analysis of Heavy Metals in Topical Cannabis Pain Relief Products**  
*Sarah Murphy, BS\**; Marisia Fikiet, PhD; Alyssa Marsico, PhD
- 11:30 am – 1:00 pm      **Y63**      **The Identification and Quantification of Illicit Drugs in Blood Using Stir Bar Sorptive Extraction and LC/QqQ/MS**  
*Abigail Noll, BS\**; Stephanie Wetzel, PhD; Sean Fischer, PhD; Ashley Ebert, PhD
- 11:30 am – 1:00 pm      **Y64**      **Optimizing Simultaneous DNA, RNA, and Protein Extraction From Human Teeth: The Effects of Incubation Time and Environmental Factors**  
*Maria Castagnola, MA\**; Mayaas Hassan, BA; Alixs Pujols, BS; Shelby Feirstein, MS;  
Luis Cabo, MS; Joe Adserias-Garriga, PhD; Sara C. Zapico, PhD

# YFSF POSTER SESSION

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- 11:30 am – 1:00 pm    **Y65**    **The Influence of Heat on Animal Fiber Transformation: Macroscopical and Microscopical Approaches**  
*Hwan Hee Lee, BS\*; Walter Rowe, PhD*
- 11:30 am – 1:00 pm    **Y66**    **A Portable Microfluidic Biochip for the Simultaneous On-Site Detection of Streptococcus Pneumoniae and Bordetella Pertussis for Forensic Pathology Investigation**  
*Angel Gutierrez Ruiz\*; Ariana Almanza\*; Xiujun Li, PhD*
- 11:30 am – 1:00 pm    **Y67**    **Investigating Without A Badge: How Civilian Detectives Influence Forensic Science and Law Enforcement**  
*Emily Lentsch, BS\**
- 11:30 am – 1:00 pm    **Y68**    **The Effects of Anxiety and Depression on Adolescent Offender Behavior**  
*Maylynn Burns\*; Rose Danek, PhD*
- 11:30 am – 1:00 pm    **Y69**    **Posthumous Sperm Viability: Exploring the Impact of Time Since Death for Forensic and Reproductive Applications in India**  
*Mrinal Patnaik, MD\*; Raghvendra Vidua, MD; Arneet Arora, MD; Ashwani Tandon, MD*
- 11:30 am – 1:00 pm    **Y70**    **Isolating Novel DNA Methylomic Bone Signatures for Age Estimation in Fresh and Forensic Samples**  
*Luke W. Gent, Mres, BSc\*; Edward Schwalbe, PhD; Dean Thompson, PhD; Noemi Procopio, PhD*
- 11:30 am – 1:00 pm    **Y81**    **Volatile Organic Compounds (VOC) of Decomposition of Tissues Exposed to Diphenhydramine and Ibuprofen Influence on Fly Attraction**  
*Mei Conlon\*; Ashley Almeida, BS; Jovina Monteiro, BS; Samantha Sawyer, PhD*
- 11:30 am – 1:00 pm    **Y82**    **How Do Muzzle Velocity, Bullet Mass, and Overall Kinetic Energy Influence Skeletal Fracture Initiation and Propagation Patterns?**  
*Delaney Edwards, MA\*; Mariyam Isa, PhD*

## Friday

### Poster Session

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- 11:30 am – 1:00 pm    **Y71**    **The Variation of Aerosolized Nicotine as Ethanol Concentration Increases in E-Cigarette Formulations**  
*Jessemia Meekins, BS\*; Justin Poklis, BS; Michelle Peace, PhD; Abby Veaser, MFS*
- 11:30 am – 1:00 pm    **Y72**    **An Analysis of the Incidence of Selected Opioids Seized Across Canada, 2018–2022**  
*Bella Lehtamaki-Croiser, BSc\*; Matthew Leon, BSc; James Watterson, PhD*
- 11:30 am – 1:00 pm    **Y73**    **The Unsupervised Learning of Individuals in Keystroke Dynamics Via Semi-Supervised Multilayer Mixture Models**  
*Andrew Simpson, MS\*; Semhar Michael, PhD*
- 11:30 am – 1:00 pm    **Y74**    **An Analysis of Human DNA Extraction From Plants in a Mock Burial**  
*Rebecca Sines, BS\*; Lyndsie Ferrara, PhD; Sheree Hughes, PhD; Pamela Marshall, PhD*
- 11:30 am – 1:00 pm    **Y75**    **Examining the Presence of Foreign DNA on Neck Swabs**  
*Alexa Gonzalez Morales, BS\*; Lyndsie Ferrara, PhD*

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- 11:30 am – 1:00 pm      **Y76**      **The Persistence of Human eDNA in Air**  
*Pamela Marshall, PhD; Lyndsie Ferrara, PhD; Kayla Houghton, BS\**
- 11:30 am – 1:00 pm      **Y77**      **The Development of a Multilocus Sequence Typing Scheme for Characterizing Geographically Distributed *Yarrowia Lipolytica* Strains**  
*Renea Douglas, BSc\*; James Crill, BAS*
- 11:30 am – 1:00 pm      **Y78**      **Subjective to Objective: An Investigation of Manual and Digital Qualitative Color Change Tools**  
*Giavanna Bassi, BS\*; Savanna Agilar, MS; Micki Besse, MS; Heather Walsh-Haney, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 am – 1:00 pm      **Y79**      **The Application of ATR/FTIR Spectroscopy for Differentiation of Liquid Cosmetic Foundations**  
*Kelly Elkins, PhD; Jaden Force, BS\**
- 11:30 am – 1:00 pm      **Y80**      **The Effect the Distance Between the Sample and Charcoal Strip and the Type of Passive Headspace System Have on Overall Chromatographic Patterns of Ignitable Liquid Residues**  
*Emily Gondek, BS\*; Ellen Hondrogiannis, PhD*