



# TOXICOLOGY

Wednesday

## Toxicology Section Awardees Recognition (*by invitation only*)

6:30 p.m. - 7:30 p.m.

Supported by: The Center for Forensic Science Research and Education at the  
Fredric Rieders Family Foundation  
Lemos Toxicology Services LLC  
NMS Labs

## Poster Session

Moderator: Karen S. Scott, PhD  
Arcadia University  
Glenside, PA

Co-Moderator: Sarah Urfer, MS  
ChemaTox Laboratory, Inc  
Boulder, CO

- 7:30 p.m. - 9:00 p.m.    **K1**    **An Improvement for High Sensitivity of Drug Screening by Thermal Desorption and Pyrolysis Combined With Direct Analysis in Real Time-Mass Spectrometry (TDP/DART<sup>®</sup>-MS)**  
*Hiroko Abe, MA; Chikako Takei\*; Motoshi Sakakura, PhD; Teruhisa Shiota; Kayako Suga; Daisuke Yajima, MD; Hirotaro Iwase, PhD*
- 7:30 p.m. - 9:00 p.m.    **K2**    **New  $\beta$ 2-Agonists in Sports Doping**  
*Anil Aggrawal, MD\**
- 7:30 p.m. - 9:00 p.m.    **K3**    **Screening and Quantitation of Pesticides in Biological Specimens**  
*Muhammad Taimoor Chaudhary, MPhil\*; Mohammed Sarwar, PhD; Sardar Ali Wattoo, MPhil; Mohammad A. Tahir, PhD*
- 7:30 p.m. - 9:00 p.m.    **K4**    **Elemental Analysis of Hair and Tissue by Open Vessel Digestion and Inductively Coupled Plasma/Mass Spectrometry (ICP/MS) Analysis**  
*Beth M. Slaybaugh, MPS\*; Donna M. Papsun, MS; Riley Murphy, PhD; Joan Schemmer; Lee M. Blum, PhD*
- 7:30 p.m. - 9:00 p.m.    **K5**    **The Application of Carboxylic Acid Functionalized Multi-Walled Carbon Nanotubes (COOH-MWCNTs) in the Extraction of Drugs in Plasma**  
*Hee-Sun Chung, PhD\*; Heesun Moon, BS*
- 7:30 p.m. - 9:00 p.m.    **K6**    **The Simple and Fast Extraction of Pesticides Using Dried Blood Spot (DBS) and Liquid Chromatography/Quadrupole Time-Of-Flight/Mass Spectrometry (LC/qTOF/MS)**  
*Hee-Sun Chung, PhD\*; Sohee Jung, BS*
- 7:30 p.m. - 9:00 p.m.    **K7**    **The Analysis of Amino Acid in Vitreous Humor Using Liquid Chromatography/Mass Spectrometry (LC/MS) for a Postmortem Interval (PMI) Potential Biomarker**  
*Hee-Sun Chung, PhD\*; Sujin Kim, BS*
- 7:30 p.m. - 9:00 p.m.    **K8**    **Double-Suicide by Gamma-Butyrolactone (GBL) Ingestion: An Analysis by Headspace/Solid-Phase Microextraction Coupled to Gas Chromatograph/Mass Spectrometer (HS/SPME/GC/MS) and Tandem Columns**  
*Brian Joseph Waters, MS\*; Kenji Hara, PhD; Natsuki Ikematsu, BPharm; Mio Takayama, PhD; Aya Matsusue, PhD; Masayuki Kashiwagi, PhD; Shin-ich Kubo, PhD*

- 7:30 p.m. - 9:00 p.m. **K9** **Validation of the Neogen® Enzyme-Linked Immuno-Sorbent Assay (ELISA) Cocaine/Benzoyllecgonine-2 Kit for Whole Blood and Urine Specimens**  
*Nicholas B. Tiscione, MS\**
- 7:30 p.m. - 9:00 p.m. **K10** **The Detection of Various Drugs in Human Urine Samples Via Total Vaporization-Solid Phase Microextraction (TV-SPME)**  
*Kymeri E. Davis, BSc\*; John V. Goodpaster, PhD*
- 7:30 p.m. - 9:00 p.m. **K11** **The Postmortem Distribution of 3,4-Methylenedioxymethamphetamine (MDMA) and 3,4-Methylenedioxyamphetamine (MDA) From an Accidental Death Due to MDMA Intoxication**  
*Danylle Kightlinger\*; Victor W. Weedn, MD, JD; Lucas W. Zarwell, MFS*
- 7:30 p.m. - 9:00 p.m. **K12** **The Detection and Quantitation of Ten Synthetic Cannabinoid Metabolites in Human Urine Using High-Performance Liquid Chromatography/Tandem Mass Spectrometry (HPLC/MS/MS)**  
*Cassandra A. Swart, BS\*; Daniel Lee, MS; Mikayla Caldwell, BS; Katherine N. Moore, MS; Nichole D. Bynum, MS; Sabra R. Botch-Jones, MS*
- 7:30 p.m. - 9:00 p.m. **K13** **The Detection and Quantitation of 17 Synthetic Cannabinoids in Human Whole-Blood Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Following Supported Liquid Extraction**  
*Daniel Lee, MS; Shawn Foley, BS; Erika Phung, BS; Cassandra A. Swart, BS; Nichole D. Bynum, MS; Katherine N. Moore, MS; Sabra R. Botch-Jones, MS\**
- 7:30 p.m. - 9:00 p.m. **K14** **An Analysis of Carboxyhemoglobin in Postmortem Blood and Epidemiology Data of Suicide Autopsy Cases From 2011–2016 in Taiwan**  
*Chu-An Yang, MS\*; Hsiu-Chuan Liu, MS; Ray H. Liu, PhD; Dong-Liang Lin, PhD*
- 7:30 p.m. - 9:00 p.m. **K15** **An Imidacloprid Insecticide Fatal Poisoning: Gas Chromatography/Mass Spectrometry (GC/MS) Detection in Alternative Biological Matrices**  
*Antonella Sorrentino, MD\*; Biagio Solarino, PhD; Silvia Trotta; Quintino Mita, BS; Giuseppe Strisciullo, BES; Lucia Aventaggiato*
- 7:30 p.m. - 9:00 p.m. **K16** **An Impaired Driving Case Involving Xylazine**  
*Ilene K. Alford, MS\*; Nicholas B. Tiscione, MS*
- 7:30 p.m. - 9:00 p.m. **K17** **Liquid Chromatography/Quadrupole Time-Of-Flight (LC/qTOF) Screening for Fentanyl Analogs in Whole Blood and Oral Fluid**  
*Kaitlyn B. Palmquist, BS\*; Madeleine J. Swortwood, PhD*  
*(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 7:30 p.m. - 9:00 p.m. **K18** **Kava Impairment in Drivers**  
*Ashley A. Gilbert, BS\*; Justin Grodnitzky, PhD; Jonna Berry, PhD*  
*(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 7:30 p.m. - 9:00 p.m. **K19** **A Comparison of Multiple Extraction/Purification Methods for Novel Psychoactive Substances (NPS) From Biological Matrices**  
*Ashley N. Kimble, BS\*; Anthony P. DeCaprio, PhD*
- 7:30 p.m. - 9:00 p.m. **K20** **Drunk Driving Detected by an Expiratory Alcohol Detector After Chewing *Areca Catechu*: A Case Report and Result Analysis**  
*Jingjie Wu, PhD\**



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- 7:30 p.m. - 9:00 p.m. **K21** **The Detection and Quantification of 23 Drugs in Blood and Urine Following Solid Phase Extraction (SPE) Using Ultra Performance Liquid Chromatography-Tandem Mass Spectrometry (UPLC-MS/MS)**  
*Courtney McGowan, BS\**; *Kelsie L. Jenquine, BS*; *Michael Moretto, BS*; *Shawn Foley, BS*; *Nichole D. Bynum, MS*; *Katherine N. Moore, MS*; *Sabra R. Botch-Jones, MS*
- 7:30 p.m. - 9:00 p.m. **K22** **Driving Under the Influence of Drugs (DUID) in Different Countries: An Overview**  
*Aldo Di Nunzio\**; *Michele Di Nunzio, BS\**; *Antonello Crisci, MD*; *Ciro Di Nunzio, PhD\**
- 7:30 p.m. - 9:00 p.m. **K23** **The Impact of Storage Conditions, Sample Volume, and Collection Technique on Blood Alcohol Concentration (BAC) in Non-Decomposed Defibrinated Sheep's Blood**  
*Christian T. Pascual\**; *S. Sharee Lambert, BA*; *Carrie Hodges, MLS*; *Melissa M. Bailey, PhD*
- 7:30 p.m. - 9:00 p.m. **K24** ***In Silico* Simulation of Fentanyl Raman Spectra**  
*Madison R. Schackmuth, BS\**; *Patrick Buzzini, PhD*; *Darren L. Williams, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 7:30 p.m. - 9:00 p.m. **K25** **The Development of a Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analytical Method for Simultaneous Detection of Tetrahydrocannabinol (THC), Cannabidiol, Cannabinol, and 11-Nor-9-Carboxy-Tetrahydrocannabinol in Hair and Its Application to Authentic Hair Samples**  
*Byungseok Cho, PhD*; *Han Soo Cho, MD*; *Sangwhan In, PhD*; *Eunmi Kim, PhD\**
- 7:30 p.m. - 9:00 p.m. **K26** **The Great Enigma of the Cause of Death in Burns: The Role of Forensic Toxicological Surveys—A Case Report and Review of the Literature**  
*Isabella Aquila, MD\**; *Santo Gratteri, MD*; *Roberto Raffaele, BE\**; *Fabrizio Cordasco, MD*; *Francesco Sicilia, MD\**; *Matteo A. Sacco, MD\**; *Pietro Tarzia, MD*; *Simona Mongiardi*; *Pietrantonio Ricci, MD, PhD*
- 7:30 p.m. - 9:00 p.m. **K27** **Metabolic Profiling of the Synthetic Cannabinoid AB-FUBINACA Using an Electrochemical Cell, Human Liver Microsomes, Cryopreserved Hepatocytes, and Liquid Chromatography/High Resolution Mass Spectrometry (LC/HRMS)**  
*Eduardo M. Cardoso, MSc\**
- 7:30 p.m. - 9:00 p.m. **K28** **Methadone Overdose in Patients Following Methadone Maintenance Treatment: An Italian Issue**  
*Matteo Favia\**; *Ilaria Santoemma*; *Quintino Mita, BS*; *Giuseppe Strisciullo, BES*; *Francesco Introna, MD*; *Antonio De Donno, PhD*
- 7:30 p.m. - 9:00 p.m. **K29** **Yohimbine Quantification in Postmortem Specimens: Two Case Reports**  
*Matthew N. Newmeyer, PhD\**; *Rebecca Jufer Phipps, PhD*; *Barry S. Levine, PhD*; *Zabiullah Ali, MD*; *John Stash, DO*; *David R. Fowler, MD*
- 7:30 p.m. - 9:00 p.m. **K30** **Validation of an Assay for Amphetamines in Postmortem Samples Using Supported Liquid Extraction (SLE) and Biotage® Extrahera™ Automation Followed by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis**  
*Heidy P. Rivera, BA\**; *Kristen M. Bailey, MS*; *Lauren L. Richards-Waugh, PhD*; *James C. Kraner, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 7:30 p.m. - 9:00 p.m. **K31** **Method Validation for Simultaneous Identification and Quantification of Postmortem Volatiles in Whole Blood (WB), Vitreous Humor (VH), and Cerebrospinal Fluid (CSF) Using Gas Chromatography/Headspace/Flame Ionization Detector (GC/HS/FID)**  
*Supriya Krishna, MSc\**; *Om P. Murty, MD*; *Ashok K. Jaiswal, PhD*; *Tabin Millo, MD*

- 7:30 p.m. - 9:00 p.m. **K32** **Ethylenediamine Opioid Analogs, AH-7921, and U-47700 and Their Actions on Cloned Human OPRM1 Receptors**  
*John L. Krstenansky, PhD\**; *Alexander C. Zambon, PhD*; *Thomas Hsu, PhD*;  
*Jayapal Mallareddy, PhD*
- 7:30 p.m. - 9:00 p.m. **K33** **The Extraction and Quantification of Cocaine and Its Metabolites From Fly Pupae**  
*Shelby M. Sarginson\**; *Kerry Lynn Opel, MA, PhD*
- 7:30 p.m. - 9:00 p.m. **K34** **An Analysis of Alcohol Metabolites Ethyl Glucuronide and Ethyl Sulfate in Human Umbilical Cord Samples**  
*Marykathryn Tynon Moody, MSFS\**; *Joseph Homan, MS*; *Denise Nicole Schiller, MSFS*;  
*Wendy R. Adams, PhD*; *Frederick Strathmann, PhD*; *Barry K. Logan, PhD*;  
*Robert A. Middleberg, PhD*
- 7:30 p.m. - 9:00 p.m. **K35** **2,4-Dinitrophenol (2,4-DNP)—An “Old New Drug”: A Gas Chromatography/Mass Spectrometry (GC/MS) Method for Screening and Quantitation of 2,4-DNP in Postmortem Blood Specimens and Three Fatal Poisoning Cases Reports**  
*Eduardo G. de Campos, MSc\**; *Melissa Friscia, MSFS*; *Barry K. Logan, PhD*
- 7:30 p.m. - 9:00 p.m. **K36** **Quantitation of Fentanyl and Metabolites From *Lucilia Sericata* Larvae and Liver Tissue Using a Modified Quick, Easy, Cheap, Effective, Rugged, and Safe (QuEChERS) Extraction With Analysis by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)**  
*Joseph A. Cox, MS\**; *Colby Ott, BS*; *Luis E. Arroyo, PhD*
- 7:30 p.m. - 9:00 p.m. **K37** **Study of the Mu-, Kappa-, and Delta-Opioid Receptor Models and the Kratom Alkaloids**  
*Reba E. Chamblee\**; *Caroline Spencer, BS*; *Pankaj Pandey, PhD*; *Robert J. Doerksen, PhD*;  
*Murrell Godfrey, PhD*
- 7:30 p.m. - 9:00 p.m. **K38** **Electrochemical Tools for the Rapid Detection of Opioids and Novel Psychoactive Substances (NPS) With Confirmatory Analysis by Liquid Chromatography/Triple Quadrupole/Mass Spectrometry (LC/QqQ/MS)**  
*Colby Ott, BS\**; *Joseph A. Cox, MS*; *Hugo Silva, MS*; *Julia Arcos-Martínez, PhD*;  
*Luis E. Arroyo, PhD*
- 7:30 p.m. - 9:00 p.m. **K39** **A Comprehensive Analysis of Synthetic Cannabinoids and Metabolites in Oral Fluid (OF) by Online Solid Phase Extraction (SPE) and Liquid Chromatography/Triple Quadrupole/Mass Spectrometry (LC/QqQ/MS)**  
*Carmen T. Mulet, BS\**; *Anamary Tarifa, PhD*; *Anthony P. DeCaprio, PhD*  
*(FSF Emerging Forensic Scientist Award Poster Presentation)*
- 7:30 p.m. - 9:00 p.m. **K40** **Investigating the Binding of Fentanyl and Fentanyl Analogs to the Opioid Receptors**  
*Marissa A. Teske\**; *Caroline Spencer, BS*; *Pankaj Pandey, PhD*; *Robert J. Doerksen, PhD*;  
*Murrell Godfrey, PhD*
- 7:30 p.m. - 9:00 p.m. **K41** **Qualitative and Quantitative Analysis of Novel Psychoactive (Hallucinogenic) Drugs in Urine, Oral Fluids, and Blood for Forensic Toxicology**  
*Rory M. Doyle, PhD\**; *Dominic Andrada, MS*; *Catherine P. Riley, MS*
- 7:30 p.m. - 9:00 p.m. **K42** **Serum Albumin Binds Synthetic Cannabinoids and Model Compounds and Drugs**  
*Oluseyi A. Vanderpuye, PhD\**; *Alexius K. Lampkin*; *Johnathan Jones, BS*
- 7:30 p.m. - 9:00 p.m. **K43** **Postmortem Distribution of Nicotine and Cotinine in Suicidal Overdoses Following Transdermal and Oral Administration**  
*Rebecca Jufer Phipps, PhD\**; *Saffia Ahmed Sakinedzad, MD*; *Mary G. Ripple, MD*;  
*Ling Li, MD*; *David R. Fowler, MD*



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7:30 p.m. - 9:00 p.m. **K44** **Surface Enhanced Raman Scattering (SERS) Analysis for Synthetic Opioids**  
*Xuyang He\**

7:30 p.m. - 9:00 p.m. **K45** **WITHDRAWN**

## Thursday

### Annual Lectureship in Toxicology (Not Eligible for CE Credit)

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*Moderator:* Sherri L. Kacinko, PhD  
Willow Grove, PA

*Co-Moderator:* Sabra R. Botch-Jones, MS  
Boston University School of Medicine  
Biomedical Forensic Sciences  
Boston, MA

8:30 a.m. - 9:45 a.m. **The Path From Pharmacologist/Toxicologist to Medical Journalist**  
*David J. Kroll, PhD\**

9:45 a.m. - 10:00 a.m. **Break**  
*Supported by: The Center for Forensic Science Research and Education at the  
Fredric Rieders Family Foundation  
Lemos Toxicology Services LLC  
NMS Labs*

### Drug Trends: Monitoring and Prevalence

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*Moderator:* Erin L. Karschner, PhD  
Armed Forces Medical Examiner System  
Dover Air Force Base, DE

*Co-Moderator:* Robert D. Johnson, PhD  
Tarrant County Medical Examiner's Office  
Fort Worth, TX

10:00 a.m. - 10:15 a.m. **K46** **The Interplay Between Forensic Analysis of Seized Drug and Medicolegal Death Investigation Toxicology in the Investigation of Clinical Intoxications to Support Public Health Preparedness and Response**  
*Barry K. Logan, PhD\*; Alex J. Krotulski, MS; Amanda L.A. Mohr, MSFS*

10:15 a.m. - 10:30 a.m. **K47** **The Identification of Synthetic Cannabinoids in Forensic Toxicology Casework Using an Archived High Resolution Mass Spectrometry Data System**  
*Amanda L.A. Mohr, MSFS\*; Alex J. Krotulski, MS; Barry K. Logan, PhD*

10:30 a.m. - 10:45 a.m. **K48** **Sample Mining: The Identification of Emerging Novel Psychoactive Substances (NPS) Through Reanalysis of Biological Extracts From Forensic Toxicology Casework**  
*Alex J. Krotulski, MS\*; Susan Varnum, PhD; Barry K. Logan, PhD*

10:45 a.m. - 11:00 a.m. **K49** **Fringe Analogs: The Emergence of New Synthetic Drugs in Postmortem Cases in Miami**  
*Elisa N. Shoff, BS\*; George W. Hime, MS; Diane Boland, PhD*

11:00 a.m. - 11:15 a.m. **K50** **A Carfentanil Outbreak in Florida in 2016**  
*Chris Delcher, PhD; Yanning Wang, MS; Russell S. Vega, MD; Jessica Hvozdoch, BS\*;  
Chris W. Chronister, PhD; Bruce A. Goldberger, PhD  
(FSF Emerging Forensic Scientist Award Paper Presentation)*



- 11:15 a.m. - 11:30 a.m. **K51** **Examining Demographics and Emerging Drug Trends on Accidental Deaths Due to Intoxication in Washington, DC**  
*Samantha Tolliver, PhD\**; *Lucas W. Zarwell, MFS*
- 11:30 a.m. - 11:45 a.m. **K52** **Long-Term Phencyclidine (PCP) Usage Trends in the District of Columbia**  
*Kristin Jones, BS*; *Charis Wynn, MSc\**; *Lucas W. Zarwell, MFS*
- 11:45 a.m. - 12:00 p.m. **K53** **Determining the Prevalence of Gabapentin Abuse Among Opioid Users in Northern Virginia**  
*Alexa Genalo, MSc\**
- 12:00 p.m. - 1:00 p.m. **Lunch**

## Analytical Testing and Interpretation

*Moderator: Ashraf Mozayani, PharmD, PhD*  
*Texas Southern University*  
*Houston, TX*

*Co-Moderator: Michael R. Corbett, PhD, LLM*  
*University of Ontario*  
*Mississauga, ON, CANADA*

- 1:00 p.m. - 1:15 p.m. **K54** **The Use of Molecular Modeling to Investigate the Influence of Structural Characteristics on the Binding of Synthetic Cannabinoids to the CB1 Receptor**  
*Caroline Spencer, BS\**; *Pankaj Pandey, PhD*; *Robert J. Doerksen, PhD*; *Murrell Godfrey, PhD*
- 1:15 p.m. - 1:30 p.m. **K55** **Can Synthetic Urine Replace Authentic Urine to Cheat Drug Testing?**  
*Victor J. Kim, BBA\**; *Catherine K. Okano, PhD*; *Caroline Osborne, BS*; *Deanna Frank, BS*; *Christopher Meana, BS*; *Marisol Castaneto, MS*
- 1:30 p.m. - 1:45 p.m. **K56** **Detection of *In Utero* Ethanol Exposure Via Ethyl Glucuronide and Ethyl Sulfate Analysis in Placenta**  
*Jennifer Hanna*; *Ana De Castro, PhD*; *Elena Lendoiro, MD*; *Angelines Cruz-Landeira, PhD, MD*; *Manuel Lopez-Rivadulla, PhD*; *Marta Concheiro-Guisan, PhD\**
- 1:45 p.m. - 2:00 p.m. **K57** **Co-Reaction of Lactate/Lactate Dehydrogenase in an Enzymatic Ethanol Assay**  
*Julia C. Liebl, BA\**; *Robert H. Powers, PhD*
- 2:00 p.m. - 2:15 p.m. **K58** **The Application of Statistical Design of Experiments (DoE) to Assess External Decontamination Methods in Forensic Hair Analysis**  
*Jennett M. Chenevert, MS\**; *Anthony P. DeCaprio, PhD*  
*(FSF Emerging Forensic Scientist Award Paper Presentation)*
- 2:15 p.m. - 2:30 p.m. **K59** **An Evaluation of a Presumptive Screen in Urine as a Rapid Method of Determining Fentanyl-Related Deaths**  
*Aaron M. Shapiro, PhD\**; *Andrew Tu, PhD*; *Michael Moss, MBBS*; *Jatinder Baidwan, MBBS*
- 2:30 p.m. - 2:45 p.m. **K60** **Distinguishing Cyclopropylfentanyl From the Analogs Crotonylfentanyl and Methacrylfentanyl in Two Dimensions: The Utilization of Liquid Chromatography and Mass Spectrometry**  
*Svante Vikingsson, PhD\**; *Markus Roman, BS*; *Robert Kronstrand, PhD*
- 2:45 p.m. - 3:00 p.m. **Break**  
*Sponsored by: The Center for Forensic Science Research and Education at the*  
*Fredric Rieders Family Foundation*  
*Lemos Toxicology Services LLC*  
*NMS Labs*



# TOXICOLOGY

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## Postmortem and Driving Under the Influence of Drugs (DUID) Toxicology

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Moderator: Sarah Kerrigan, PhD  
Sam Houston State University  
Huntsville, TX

Co-Moderator: Michael Wagner, MS, PA  
Fort Lauderdale, FL

- 3:00 p.m. - 3:15 p.m.    **K61**    **Method Optimization for the Derivatization of 35 Drugs Commonly Reported in Driving Under the Influence of Drugs (DUID) Cases**  
*Lexus R. Rutter, BS\**; *Jody Searfoss, BA*; *Kristina Fanning, MS*; *Danielle A. Mackowsky, MS*;  
*Karen S. Scott, PhD*  
(FSF Emerging Forensic Scientist Award Paper Presentation)
- 3:15 p.m. - 3:30 p.m.    **K62**    **A Case Report: Driving Under the Influence of Flubromazepam**  
*Erin L. Karschner, PhD\**; *George F. Jackson, PhD*; *Jeff Walterscheid, PhD*
- 3:30 p.m. - 3:45 p.m.    **K63**    **Toxicological Findings in Driving Under the Influence Cases in Northeast Ohio: A Six-Year Study**  
*Amanda J. Jenkins, PhD\**; *Kimberly Yacoub, MS*; *Douglas E. Rohde, MS*
- 3:45 p.m. - 4:00 p.m.    **K64**    **Inhalant Abuse: Cases Analyzed for Toluene Over a Three-Year Period**  
*Justine M. Titko, MSFS\**; *Lee M. Blum, PhD*; *Dennis J. Miller*; *Ayako Chan-Hosokawa, MS*
- 4:00 p.m. - 4:15 p.m.    **K65**    **The Detection and Quantification of Amphetamine and Norephedrine in Rat Brain, Heart, and Liver Tissues at Different Stages of Decomposition After Internment**  
*Christina Rose Mendralla, BS\**; *Jolene Bierly, MSFS*; *Heather L. Harris, JD*;  
*Karen S. Scott, PhD*  
(FSF Emerging Forensic Scientist Award Paper Presentation)
- 4:15 p.m. - 4:30 p.m.    **K66**    **The Stability of Antidepressants and Antipsychotics in Dried Blood Spots (DBS) in Postmortem Cases**  
*Matteo Moretti, MD\**; *Francesca Freni, MSc*; *Silvia D. Visona, MD*; *Claudia Vignali*;  
*Angelo Groppi*; *Antonio M.M. Osculati, MD*; *Luca Morini*  
(FSF Emerging Forensic Scientist Award Paper Presentation)
- 4:30 p.m. - 4:45 p.m.    **K67**    **A Rare Case Report on Sedative-Hypnotic Drug Screening in Homicidal Carbon Monoxide (CO) Poisoning**  
*Linchuan Liao\**
- 4:45 p.m. - 5:00 p.m.    **K68**    **Medicinal Drug Suicide: A Six-Year Forensic Survey**  
*Asit Kumar Sikary, MD\**; *Anu Sasidharan, MD*; *V.V. Pillay, MD*; *Chittaranjan Andrade, MD*

## Toxicology Open Forum (Not Eligible for CE Credit)

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7:00 p.m. - 9:00 p.m.    Supported by: Agilent Technologies, Inc.  
Biotage

## Friday—Session I

### Multidisciplinary Session: Pathology/Biology/Toxicology—Postmortem Forensic Toxicology, Part I

*Moderator: Rebecca Jufer Phipps, PhD  
Office of the Chief Medical Examiner  
Baltimore, MD*

- 8:30 a.m. - 8:45 a.m. **H136** **Trends in Novel Opioid Use in the United States From January 2014 Through April 2018 in Medicolegal Death Investigations (MDIs) and Strategies to Improve Early Identification, Detection, and Interpretation**  
*Barry K. Logan, PhD\**; *Sherry L. Kacinko, PhD*; *Donna M. Papsun, MS*;  
*Amanda L.A. Mohr, MSFS*
- 8:45 a.m. - 9:00 a.m. **H137** **Acetaminophen Toxicity Deaths in New Mexico: 1990–2016**  
*Lori A. Proe, DO\**; *Sarah Lathrop, DVM, PhD*
- 9:00 a.m. - 9:15 a.m. **K69** **Infant and Toddler Deaths Associated With Potent Opioid Exposure**  
*Robert Hargrove, BS\**; *Sandra C. Bishop-Freeman, PhD\**; *Ruth E. Winecker, PhD*
- 9:15 a.m. - 9:30 a.m. **H138** **Comparative and Correlation Studies of Biochemical Substances in Vitreous Humor (VH) and Synovial Fluid (SF)**  
*Supawon Srettabunjong, MD, MSc, MTox, LLB\**; *Wantawanop Thongphap, BSc\**;  
*Anchalee Chittamma\**; *Wanna Thongnoppakhun\**
- 9:30 a.m. - 9:45 a.m. **K70** **A Comparison of Cannabinoid Concentrations in Central and Peripheral Postmortem Blood Samples**  
*Daniel S. Isenschmid, PhD\**; *William H. Anderson, PhD*; *Barry K. Logan, PhD*
- 9:45 a.m. - 10:00 a.m. **H139** **The Outbreak of Fentanyl-Related Deaths in Cook County, Illinois, Between October 2015 and December 2017: A Retrospective Study and a Comparison With Previous Data**  
*Lorenzo Gitto, MD\**; *Steven M. White, MD, PhD*; *Ponni Arunkumar, MD*;  
*Serenella Serinelli, MD\**
- 10:00 a.m. - 10:15 a.m. **Break**  
*Sponsored by: The Center for Forensic Science Research and Education at the  
Fredric Rieders Family Foundation  
Lemos Toxicology Services LLC  
NMS Labs*

### Multidisciplinary Session: Pathology/Biology/Toxicology—Postmortem Forensic Toxicology, Part II

*Moderator: Laura M. Labay, PhD  
NMS Labs  
Willow Grove, PA*

*Co-Moderator: Douglas E. Rohde, MS  
Lake County Crime Laboratory  
Painesville, OH*

- 10:15 a.m. - 10:30 a.m. **K71** **A Comparison of Syringe Contents to Respective Biological Counterparts in 43 Medical Examiner Cases**  
*Sophia Brathwaite, BSc\**; *Lucas W. Zarwell, MFS*; *Samantha Tolliver, PhD*;  
*Chikarlo R. Leak, PhD*; *Roger A. Mitchell, Jr.*
- 10:30 a.m. - 10:45 a.m. **H140** **Loperamide Intoxication: Case Reports and a Review of the Literature**  
*Paul Uribe, MD\**





# TOXICOLOGY

- 10:45 a.m. - 11:00 a.m. **K72** **Suicide by Pesticide? A Case Study of Fenobucarb Ingestion**  
*Marissa J. Finkelstein, MS\**; *Katherine L. Kenerson, MD*; *George W. Hime, MS*;  
*Diane Boland, PhD*
- 11:00 a.m. - 11:15 a.m. **H141** **Cocaine as the Sole Intoxicant in an Unusual Suicidal Overdose**  
*Michael Heninger, MD\**
- 11:15 a.m. - 11:30 a.m. **K73** **Death Due to Acute Nicotine Intoxication**  
*Tiffany A. Hollenbeck, DO\**; *Marius Tarau, MD*; *Lindsey J. Haldiman, DO*
- 11:30 a.m. - 11:45 a.m. **H142** **The Utilization of Preliminary Urine Drug Screens in Heroin- and Fentanyl-Related Deaths**  
*Gerald Feigin, MD\**
- 11:45 a.m. - 1:00 p.m. **Lunch**

## Analytical Methods in Forensic Toxicology

*Moderator: Erin A. Spargo, PhD*  
*Dallas, TX*

*Co-Moderator: Robert Kronstrand, PhD*  
*National Board of Forensic Medicine*  
*Department of Forensic Toxicology*  
*Linköping, SWEDEN*

- 1:00 p.m. - 1:15 p.m. **K74** **Validation of the Neogen® Enzyme-Linked Immuno-Sorbent Assay (ELISA) Benzodiazepine Kit Using Clonazepam as the Target Molecule for Blood and Urine**  
*Grayce Behnke, BS\**; *Nicholas B. Tiscione, MS*; *John Rakus, PhD*;  
*Lauren L. Richards-Waugh, PhD*  
*(FSF Emerging Forensic Scientist Award Paper Presentation)*
- 1:15 p.m. - 1:30 p.m. **K75** **Quantitative Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis of 39 Fentanyl Analogs and Metabolites in Blood, Urine, and Oral Fluid**  
*Marilyn A. Huestis, PhD\**; *Dominic Andrada, MS*; *Rory M. Doyle, PhD*
- 1:30 p.m. - 1:45 p.m. **K76** **The Identification of Drug Metabolites in Adulterated Urine Samples Using Direct Analysis in Real Time-Time Of Flight/Mass Spectrometry (DART®-TOF/MS)**  
*Bianca E. Olivieri\**; *Mark Maric, PhD*; *Candice Bridge, PhD*
- 1:45 p.m. - 2:00 p.m. **K77** **The Quantification of 4-Fluoroamphetamine, 4-Fluoromethamphetamine, 4-Chloroamphetamine, and 4-Chloromethamphetamine in Postmortem Blood and Urine by Ultra High-Performance Liquid Chromatography-Tandem Mass Spectrometry (UHPLC-MS/MS)**  
*Chu-An Yang, MS\**; *Hsiu-Chuan Liu, MS*; *Ray H. Liu, PhD*; *Dong-Liang Lin, PhD*
- 2:00 p.m. - 2:15 p.m. **K78** **Staying Relevant in an Ever-Changing Climate: The Development and Validation of a Confirmatory Qualitative Synthetic Cannabinoid Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Method in Human Whole-Blood**  
*Rebecca A. Mastrovito, MS\**; *Stephanie Kumor, MA*; *Joseph Homan, MS*; *Parul Shah, BS*;  
*Denise Nicole Schiller, MSFS*; *Sherri L. Kacinko, PhD*; *Barry K. Logan, PhD*
- 2:15 p.m. - 2:30 p.m. **K79** **The Development and Validation of an Analytical Method for the Identification of New Psychoactive Substances (NPS) Using the Retention Index and Gas Chromatography/Mass Spectrometry (GC/MS)**  
*Gabriella H. Giudice, BSc*; *Angelo H. Lira Machado, DSc*; *Jorge J. Zacca\**
- 2:30 p.m. - 3:00 p.m. **Break**  
*Sponsored by: The Center for Forensic Science Research and Education at the*  
*Fredric Rieders Family Foundation*  
*Lemos Toxicology Services LLC*  
*NMS Labs*

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## Pediatric Postmortem Toxicology

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*Moderator: Robert A. Middleberg, PhD  
NMS Labs  
Willow Grove, PA*

*Co-Moderator: Nikolas P. Lemos, PhD  
University of California - San Francisco  
Palm Springs, CA*

3:00 p.m. - 5:00 p.m. **K80** **Postmortem Pediatric Forensic Toxicology**  
*Robert A. Middleberg, PhD; Nikolas P. Lemos, PhD; Sarah E. Avedschmidt, MD\*;  
Alexander Robert W. Forrest, LLM\*; David R. Fowler, MD\*; Greg Vincent, MD\**

## Friday—Session II

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### Drug Surveillance in Public Health and Medicolegal Death Investigations (MDI)

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*Moderator: Jeri D. Roper-Miller, PhD  
RTI International  
Research Triangle Park, NC*

*Co-Moderator: DeMia P. Pressley, MS  
Drug Enforcement Administration  
Diversion Control Division (DRE)  
Springfield, VA*

Several national MDI stakeholder meetings have focused on multiple federal and state agency efforts within the MDI community. It is important to highlight what these agencies are doing, how their work ties together and how they are collaborating, and how MDI practitioners are finding value in and implementing better practices using data from these efforts. This session will provide valuable information from agency representatives (CDC, DEA, BJS, ONDCP, OCDETF, NGA) and MDI practitioners.

1:00 p.m.	-	1:05 p.m.	<b>K81</b>	<b>Opening Remarks</b> <i>Jeri D. Roper-Miller, PhD*</i>
1:05 p.m.		1:17 p.m.	<b>K81</b>	<b>The High Intensity Drug Trafficking Areas</b> <i>Kemp Chester, MA*</i>
1:17 p.m.		1:29 p.m.	<b>K81</b>	<b>Data Sharing Systems at the State and National Level for Opioids and Other NPS</b> <i>M.J. Menendez, JD*</i>
1:29 p.m.		1:41 p.m.	<b>K81</b>	<b>Governors' Priorities for Addressing the Crisis Beginning With Opioids</b> <i>Jeffrey R. Locke, JD*</i>
1:41 p.m.		1:53 p.m.	<b>K81</b>	<b>National Forensic Laboratory Information System MDI Expansion</b> <i>DeMia P. Pressley, MS*</i>
1:53 p.m.		2:05 p.m.	<b>K81</b>	<b>Providing Statistical Information for the Nation's Criminal Justice Systems</b> <i>Connor Brooks, MSc*</i>
2:05 p.m.		2:17 p.m.	<b>K81</b>	<b>Strengthening the Mortality Data Infrastructure</b> <i>Margaret Warner, PhD*</i>
2:17 p.m.		2:29 p.m.	<b>K81</b>	<b>The Challenge of Investigating Drug-Related Fatalities—A Chief Medical Examiner's Perspective</b> <i>Andrew M. Baker, MD*</i>
2:29 p.m.		2:41 p.m.	<b>K81</b>	<b>Next Generation Drug Surveillance—A Forensic Toxicologist's Perspective</b> <i>Barry K. Logan, PhD*</i>
2:41 p.m.		3:00 p.m.	<b>K81</b>	<b>Moderated Panel Discussion</b> <i>DeMia P. Pressley, MS*</i>