Workshop #1: Cannabis in DUID Investigations
Sponsored by the Joint SOFT/TIAFT Drugs and Driving Committee

8 am-5:30 pm Sunday, September 10
Royal Palm Ballroom 5 and 6

Chairs: Colleen E. Scarneo, MS, Forensic Toxicologist, Department of Safety – State Police Forensic Laboratory, Concord, NH
Amy K. Miles, BS, Director of Forensic Toxicology, Wisconsin State Laboratory of Hygiene, Madison, WI

Abstract: This workshop is an official offering of the joint SOFT/TIAFT Drugs and Driving Committee. Cannabis use is a continuous challenge for Driving Under the Influence of Drugs (DUID) casework. More and more states are legalizing the drug, whether strictly for medicinal purposes or complete legalization, creating greater numbers of DUID cases. In addition to legalization, the concentration of the marijuana being sold today is much higher and more potent than in years past along with varying routes of administration. Interpreting a THC DUID case has its unique challenges such as the following: tolerance, presentation of impairment during the Standardized Field Sobriety Tests and the Drug Recognition Evaluation and the necessity for the toxicologists to understand the laws within their own state and how that applies to their casework. This workshop will address all of these issues and provide time at the end for a mock THC DUID trial with various case scenarios.

Learning Objectives:

1. Participants will learn the common pharmacological effects of cannabis through case examples and discussion of pharmacokinetics and pharmacodynamics.
2. Attendees will learn current laws associated with driving after the use of cannabis and how that may affect courtroom testimony.
3. Participants will learn about various matrices used to analyze cannabis concentrations and how that may affect case interpretation.

Instructors:

Marilyn A. Huestis, PhD, Senior Scientific Advisor, NMS Labs, Inc.
Garett M. Berman, Esq, Supervising Assistant State Attorney, Felony Trial Unit / Director of Training, Office of the State Attorney – 17th Judicial Circuit, Broward County, FL
Rebecca L. Hartman, PhD, Chief Toxicologist, Monroe County Office of the Chief Medical Examiner, Rochester, NY
Kyle J. Clark, Drug Evaluation and Classification Project Manager, International Association of Chiefs of Police
Erin Karschner, PhD, Forensic Toxicologist, Armed Forces Medical Examiner System, Dover Air Force Base, DE
Mark Chu, PhD, Senior Forensic Toxicologist, Victorian Institute of Forensic Medicine, Australia

Brianna Peterson, PhD, Laboratory Manager, Toxicology Division, Washington State Patrol, Seattle, WA

Agenda:

8-8:05 am	Introduction	Colleen Scarneo
8:05-9:15 am	Pharmacology of Cannabis	Marilyn Huestis
9:15-10 am	Legal Update	Garett Berman
10-10:30 am	Morning Break	
10:30 am-12 pm	DRE and Cannabis Impairment	Rebecca Hartman/Kyle Clark
12-1:30 pm	Lunch Break	
1:30-2:15 pm	Let's Talk About Cannabis and Tolerance	Erin Karschner
2:15-3 pm	Interpretation of THC Concentrations in Chronic Cannabis Users	Mark Chu
3-3:30 pm	DUID Case Studies	Brianna Peterson
3:30-4 pm	Afternoon Break	
4-4:15 pm	DUID Case Studies-cont.	Brianna Peterson
4:15-5:30 pm	Courtroom Practice	Panel Discussion

Keywords: Cannabis, Impaired Driving, Pharmacology

Workshop #2: When "It" Hits the Fan, Resolve it with Effective RCA

8 am-5 pm Sunday, September 10
Addison Ballroom

Chairs: Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Laurel J. Farrell, BA, Senior Accreditation Manager, ANSI-ASQ National Accreditation Board, Cary, NC

Abstract: Root Cause Analysis (RCA) is a critical step for determining effective corrective actions following errors or non-conformities in our work. Unfortunately, many lack the training and understanding of how to properly conduct a RCA. This workshop will demonstrate different approaches forensic toxicology laboratories use in identifying effective solutions to problems that they have encountered; solutions that will realistically minimize the chance of future recurrence of the non-conformity. Discussions will focus on the importance of effective RCAs and important factors to consider such as the makeup of the RCA team, suggestions on how to create a blame-free environment, how to select the best solutions, guidance on making the RCA a true learning experience, general accreditation requirements, and an overview of the National Commission on Forensic Science's view on RCAs. A significant portion of the workshop will focus on group exercises to facilitate the learning process.

Learning Objectives:

1. Compare and contrast different RCA approaches.
2. Explain the importance of RCAs and key factors to consider in conducting the investigation.
3. Participating in group RCA exercises that address real-life laboratory situations.

Instructors:
Simon Elliott, PhD, Consultant Forensic Toxicologist, Managing Director, Alere Forensics (formerly ROAR Forensics), Malvern, Worcestershire
Sarah Russell, PhD, Senior Scientist - Toxicology, Institute of Environmental Science and Research Limited, New Zealand
Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Laurel J. Farrell, BA, Senior Accreditation Manager, ANSI-ASQ National Accreditation Board, Cary, NC

Agenda:

8-8:20 am	Welcome and Overview	Laurel Farrell
8:20-9:10 am	Five "Why" Approach to RCA	Simon Elliott
9:10-9:55 am	Brainstorming/Reverse Brainstorming Approach to RCS	Sarah Russell
10-10:30 am	Morning Break	
10:30-11:30 am	Cause-Effect Mapping and Approach to RCA	Marc LeBeau
11:20 am-12 pm	RCA Group Exercises	Panel

12-1:30 pm	Lunch Break	
1:30-3:30 pm	RCA Group Exercises (continued)	Panel
3:30-4 pm	Afternoon Break	
4-4:25 pm	RCA Group Exercises (continued)	Panel
4:25-4:55 pm	Why Is Effective RCA Important? And What Did the NCFS Have to Say About RCA?	Laurel Farrell
4:55-5 pm	Closing	

Keywords: Root Cause Analysis, Corrective Action, Accreditation

Workshop #3: Different Approaches to Evaluate the Prevalence of NPS

8 am12 pm Sunday, September 10th
Royal Palm Ballroom 1-4

Chairs: Alberto Salomone, PhD, Laboratory Supervisor, Regional Anti-doping and Toxicology Center, Italy
Kevin G. Shanks, MS, Senior Forensic Toxicologist, Axis Forensic Toxicology, Indianapolis, IN

Abstract: In recent years, there has been a huge upsurge in new psychoactive substances (NPS), also known as "legal highs", "designer drugs", "herbal highs" or "research chemicals", finding a wide and efficient distribution through the "e-commerce" or specialized shops. The misuse of NPS often leads governments to prohibit them, but once these drugs have been banned, their chemical structure is slightly altered to create legal drugs with similar properties. This fast growth and structure variability has led to increasing challenges to forensic and clinical laboratories in the identification and quantification of new psychoactive substances. At present, most routine analyses do not include screening procedures for NPS, preventing clear knowledge of the real prevalence or consumption of these new drugs in the population. Furthermore, the potential connection between the use of new psychoactive substances and traffic or occupational accidents is so far largely unknown. Several approaches have been tried in the attempt of obtaining some preliminary information about the type of molecules present in different times in different countries, about the current diffusion of NPS among the population and on the characteristics of the users of these synthetic drugs. This workshop will explore different strategies that are used in the United States and Europe to investigate the diffusion of NPS in selected scenarios, such as workplace drug testing, electronic music festivals, young consumers, intoxication cases and driving relicensing. The workshop will also overview the methods for screening and monitoring the use of NPS in selected population, focusing on recent developments and challenges of the online monitoring of legal high products, the interpretation of hair samples results, the analysis of wastewaters and the combined use of surveys and biological testing.

Learning Objectives:

1. Participants will learn about different analytical strategies to investigate the diffusion of different NPS in different countries.
2. Participants to the workshop will be able to discuss the prevalence of NPS in their field of activity.
3. Participants will learn about hundreds of real cases from United States and Europe.

Instructors:

Björn Moosmann, PhD, Senior Researcher, Institute of Forensic Medicine, Kantonsspital St. Gallen, Switzerland
Joseph Palamar, Associate Professor, New York University Langone Medical Center, Department of Population Health, New York, NY

David Kuntz, PhD, Director of Analytical Toxicology, Clinical Reference Laboratory Inc., Lenexa, KS
Kevin G. Shanks, MS, D-ABFT-FT, Senior Forensic Toxicologist, Axis Forensic Toxicology, Indianapolis, IN
Frederic Been, PhD, Post-doc Researcher, Toxicological Center, University of Antwerp, Belgium
Alberto Salomone, PhD, Laboratory Supervisor, Regional Anti-doping and Toxicology Center, Italy

Agenda:

8-8:05 am	Welcome and Introduction	Alberto Salomone Kevin Shanks
8:05-8:45 am	NPS – Overview, Methods of Detection, and Pitfalls	Björn Moosmann
8:45-9:15 am	When Survey Data Isn't Enough: The Need to Add Biological Testing to NPS Prevalence Studies	Joseph Palamar
9:15-10 am	NPS in the Workplace Drug Testing	David Kuntz
10-10:30 am	Morning Break	
10:30-11 am	Postmortem Toxicology and Human Intoxication Cases	Kevin Shanks
11-11:30 am	Wastewater and NPS – Possibilities and Challenges of Complimentary Monitoring Approaches	Frederic Been
11:30am-12pm	Hair Analyses as a Tool to Evaluate the Prevalence of NPS in Selected Populations	Alberto Salomone

Keywords: NPS, Wastewater, Intoxication

Workshop #4: Quantitative Clinical and Forensic Toxicological Analysis with LC HR-MS

1:30-5:30 pm Sunday, September 10
Royal Palm Ballroom 7-10

Chairs: Alain Verstraete, MD, PhD, Senior Full Professor, Ghent University & Ghent University Hospital, Belgium
Markus Meyer, PhD, Professor, Institute for Pharmacology and Toxicology, Saarland University, Germany

Abstract: Historically, high-resolution mass spectrometry (HRMS) has been associated with qualitative and research analysis and QQQ-MS with quantitative and routine analysis. High-resolution mass spectrometry, both based on time-of-flight (TOF) or Orbitrap-type instruments, is however increasingly used for quantitative analysis. It offers several advantages over QQQ-MS: easier method development (no need to infuse the standards), ease of adding compounds to an existing method without the need for re-validation of the compounds that were already in the method (for full-scan methods) and retrospective analysis for other compounds. Quantification can be based on high-resolution full-scan analysis, selected ion monitoring or multiple reaction monitoring. All the speakers at this workshop have extensive experience with quantitative analysis with high-resolution instruments. Examples will be given from forensic and clinical toxicology: drugs of abuse and pharmaceuticals in plasma and blood, anabolics, drugs of abuse and pharmaceuticals in hair, benzodiazepines and antidepressants in plasma, amphetamines in urine, … One presentation will cover hyphenated HRMS in environmental sciences and the latest developments in wastewater NPS analysis. Method validation results will be presented. The possible pitfalls, e.g. co-eluting molecules with the same exact mass, interference by very close masses, ... will also be addressed.

Learning Objectives:

1. Learn how easy it is to set up a quantitative method with HR-MS instruments.
2. Learn about the experience with different analytes in different matrices in clinical and forensic laboratories.
3. Learn about the possible pitfalls of high-resolution quantitative methods.

Instructors:
Alain Verstraete, MD, PhD, Senior Full Professor, Ghent University & Ghent University Hospital, Belgium
Marilyn A. Huestis, PhD, Senior Scientific Advisor, NMS Labs, Inc.
Petur W. Dalsgaard, PharmM, PhD, Section of Forensic Chemistry, University of Copenhagen, Denmark
Donata Favretto, PhD, Professor, University of Padova, Italy
Jean-Claude Alvarez, PharmD, PhD, Medical Professor of Pharmacology / Toxicology, University of Versailles Saint Quentin en Yvelines, France
Markus Meyer, PhD, Professor, Institute for Pharmacology and Toxicology, Saarland University, Germany

Agenda:

1:30-2:10 pm	General Introduction on Quantitative Analysis, with Examples from Clinical Toxicology: Benzodiazepines and Antidepressants in Plasma	Alain Verstraete
2:10-2:50 pm	HR-MS Quantitative Analysis of Cannabinoids and Stimulants	Marilyn Huestis
2:50-3:30 pm	Quantitative and Semi-Quantitative Analysis by UPLC-QTOF-MS	Petur Dalsgaard
3:30-4 pm	Afternoon Break	
4-4:30 pm	Routine HR-MS Methods in a Forensic Toxicology Laboratory	Donata Favretto
4:30-5 pm	Using HR-MS for Anabolics in Hair	Jean Claude Alvarez
5-5:30 pm	Recent Applications and Developments in Hyphenated HR-MS for Quantification in Clinical Toxicology and Environmental Science	Markus Meyer

Keywords: High-Resolution Mass Spectrometry, Quantitative Analysis, Drugs of Abuse, Therapeutic Drugs, Blood, Plasma, Urine, Hair, Anabolics

Workshop: #5: Making Leadership Meaningful and Productive – Part I: Fostering Open Communications and Team Building

8 am-12 pm Sunday, September 10
Estate Ballroom

Chairs: Jeri Ropero-Miller, PhD, Director, Center for Forensic Sciences, RTI International, Research Triangle Park, NC
Eleuterio Umpierrez, Adjunct Professor, Unit for Environment, Drugs, and Doping; Technological Institute of Pando; Faculty of Chemistry, Uruguay

Abstract: Most of us assumed our roles in leadership and management based on our technical performance and our demonstrated leadership. But our continuous improvement requires refined knowledge and skills to be an effective leader. Part I** of Making Your Leadership Meaningful and Productive focuses on fostering open communications and building a cohesive, effective team. After all, we spend a lot of time in our work environment and we want to be comfortable, successful, and content. An open communication environment allows employees to trust one another to give honest feedback, to express ideas freely, and to offer a dissenting voice without judgment and reprisal. A team building environment allows employees to work together effectively and is designed to increase motivation and promote cooperation. While we may know that these are needed in the workplace, we may not know how best to achieve and sustain them as a leader. This workshop will provide concepts, research, and resources to better understand the meaning behind communication and team building. Interactive, practical exercises will focus on group activities to improve team building skills of open communications, building trust, problem/decision making, and adaptability/planning activities. Fostering these skills within your laboratory culture will improve productivity and employee morale and performance. As a leader, what more could you ask for?

Learning Objectives:

1. Identify the elements of open communication and team building.
2. Develop communication skills and strategies to influence team behaviors and develop more collaborative working relationships.
3. Practice techniques to facilitate effective team communications and team building activities.

Instructors:
Gene Crumley, PhD, Director, Leadership Development, School of Medicine, University of California, Davis

Agenda:

8-8:05 am	Opening Remarks	Jeri Ropero-Miller
8:05-9:25 am	Communicating in a Laboratory Environment	Gene Crumley
9:25-9:45 am	Small Group Activity: Open Communications and Building Trust	Gene Crumley

9:45-10 am	Discussion and Sharing	
10-10:30 am	Morning Break	
10:30-11 am	Team Building and the Art of Problem Solving and Decision Making	Gene Crumley
11-11:35 am	Team Building Through Planning and Harnessing Adaptability	Gene Crumley
11:35-11:55 am	Small Group Activity: Problem / Decision Making and Adaptability Training	
11:55 am-12 pm	Closing Remarks	

Keywords: Leadership and Management, Communication, Team Building

Workshop #6: Making Leadership Meaningful and Productive – Part II: Leadership within High-Stakes Organizations

1:30-5 pm Sunday, September 10
Estate Ballroom

Chairs: Jeri Ropero-Miller, PhD, Director, Center for Forensic Sciences, RTI International, Research Triangle Park, NC
Eleuterio Umpierrez, Adjunct Professor, Unit for Environment, Drugs, and Doping; Technological Institute of Pando; Faculty of Chemistry, Uruguay

Abstract: The National Institute of Justice (NIJ) Forensic Technology Center of Excellence (FTCoE; Award 2016-MUN-BX-K110) is committed to improving the practice of forensic science and strengthening its impact on public agencies dedicated to combating crime. The intent of Part II** of this FTCoE workshop, Making Your Leadership Meaningful and Productive is to advance best practices in leadership and management by teaching contemporary human resource management principles as they relate to leadership within high-stakes organizations such as forensic toxicology laboratories. High-stakes organizations are those where perfection is a cultural expectation placed on employees by both upper management and stakeholders. High-stakes environments create unique challenges for managers and employees. These may include reductions in efficiency and productivity, increases in laboratory turnaround times, increases in the frequency of personnel problems, reduced responsiveness, employee retention problems, increased use of sick leave, and elevated risks of error. These challenges can have a direct, adverse impact on law enforcement agencies that depend on these laboratories for reliable, timely forensic testing results. Yet these challenges can be overcome through competent human resource strategies that maximize effectiveness while raising employee morale. This workshop will present specific, actionable strategies that can be adopted by forensic toxicology laboratories to improve all aspects of operations and lower the frequency of behavioral and performance-related problems among laboratory personnel.

Learning Objectives:

1. Understand what it means to be a high-stakes organization and what risks are associated with the pressures and expectations placed on employees in such environments.
2. How to establish an internal organizational "rhythm" that calms and empowers employees so that they can function at their full capacity.
3. How to properly engage employee personnel problems when they arise, understanding why they occur.
4. How to improve, overnight, your ability to engage in conflict without fear.
5. How to motivate employees by rallying around a "critical victory" that can be achieved every few years.

Instructors: John M. Collins, MA, SHRM-SCP, Founder and President, Critical Victories, Dewitt, MI

Agenda:

1:30-1:35 pm	Opening Remarks	Jeri Ropero-Miller
1:35-3:10 pm	Knowing Your Operations and Your Personnel	John Collins
3:10-3:30 pm	Discussion / Sharing / Interactive Small Groups	
3:30-4 pm	Afternoon Break	
4-4:55 pm	Human Resource Management Strategies: Unique Challenges for Managers and Employees	John Collins
4:55-5 pm	Closing Remarks	

Keywords: Leadership and Management, Human Resource Management, High-stakes Organizations

Workshop #7: Forensic Epidemiology: Integrating Forensic Medicine and Public Health

8 am-12 pm Sunday, September 10
Valencia

Chairs: Luke Rodda, PhD, Chief Forensic Toxicologists & Director, Forensic Laboratory Division, San Francisco Office of the Chief Medical Examiner, San Francisco, CA
Sarah Wille, PhD, Forensic Toxicology Expert, National Institute for Criminalistics and Criminology, Belgium

Abstract: Forensic Epidemiology is the study of forensic casework to investigate trends, patterns and risk factors for disease, injury and death. It allows us to draw evidence-based conclusions linking a harmful exposure (e.g. drug use) to a specific outcome (e.g. addiction; fatal toxicity), at an individual or population level. This information ultimately has a huge impact on national public health policy and practice; the findings of Forensic Epidemiology studies globally have provided evidentiary support for toxicology issues to inform public health interventions, particularly with regards to drug scheduling and availability, adverse drug reactions, and drug-related death. Forensic Laboratories around the world systematically produce analytical toxicology data in death investigations, driving under the influence cases, drug facilitated assaults, workplace drug testing, human performance casework, and a range of other forensic cases. While the primary objective of the medico-legal death investigation is to determine the cause and manner of death, large sets of data are generated over time, providing an opportunity for research integrating Forensic Medicine and Public Health. This workshop will provide attendees with an introduction to the use of Forensic Toxicology data in epidemiology and importantly, how it can be used to inform casework and benefit public health. Specifically, this workshop will explain what forensic epidemiology is; its uses, strengths and limitations in a forensic setting; and how it translates to public health policy and practice, with examples of previous forensic studies. Attendees will be shown how to perform basic forensic epidemiology research, including which study designs are most useful; common measures or outcomes used to best answer research questions; and understanding key data sources with the potential for data linkage. To demonstrate the process for epidemiology research in a forensic context, a step-by-step guide will be provided using a Forensic Toxicology example. In addition, instruction on the interpretation of papers with big data sets will be provided, including the challenges to correct interpretation of results, differentiating between association vs. causation, and identifying appropriate groups for comparison of results.

Learning Objectives:

1. Understand the basic principles and methods of epidemiology and their applicability to forensic toxicology;
2. Understand how to use forensic toxicology data to conduct basic epidemiological research;
3. Understand how to interpret epidemiological studies and how they can lead to positive public health outcomes.

Instructors:

Ruth E. Winecker, PhD, F-ABFT, Chief Toxicologist, North Carolina Office of the Chief Medical Examiner, Raleigh, NC
Justice Tettey, PhD, Chief, Laboratory and Scientific Section, United Nations Office of Drugs and Crime, Austria
Dimitri Gerostamoulos, PhD, Chief Toxicologist & Head, Forensic Science, Victorian Institute of Forensic Medicine, Monash University, Australia
Simon Elliott, PhD, Consultant Forensic Toxicologist, Managing Director, Alere Forensics
Henrik Druid, Professor, Karolinska Institute, Sweden
Luke Rodda, PhD, Chief Forensic Toxicologist and Director, Forensic Laboratory Division, San Francisco Office of the Chief Medical Examiner, San Francisco, CA
Sarah Wille, PhD, Forensic Toxicology Expert, National Institute for Criminalistics and Criminology, Belgium

Agenda:

8-8:15 am	Introduction and Overview	Luke Rodda and Sarah Wille
8:15-8:50 am	Epidemiology: What is It?	Ruth Winecker
8:50-9:25 am	Forensic Epidemiology and International Drug Control	Justice Tettey
9:25-10 am	Drugs and Driving Epidemiology	Dimitri Gerostamoulos
10-10:30 am	Morning Break	
10:30-11:05 am	Interpreting Epidemiology	Simon Elliott
11:05-11:40 am	A Step-by-Step Guide Using a Forensic Toxicology Example	Henrik Druid
11:40-11:50 am	Where to From Here?	Luke Rodda and Sarah Wille
11:50 am-12 pm	Questions?	

Keywords: Epidemiology, Forensic Toxicology, Public Health

Workshop #8: Strategies for the Detection of Synthetic Cannabinoids In Biological Specimens

1:30-5:30 pm
Royal Palm Ballroom 1-4

Chairs: Volker Auwärter, PhD, Professor, Institute of Forensic Medicine, Forensic Toxicology, Medical Center – University of Freiburg, Germany
Christophe P. Stove, PhD, Professor, Laboratory of Toxicology, Belgium

Abstract: Synthetic cannabinoid receptor agonists, commonly referred to as synthetic cannabinoids (SCs), constitute the largest group of new psychoactive substances (NPS). Although they are marketed as a "safe" and "legal" alternative to marijuana, many reports indicate that many of these compounds may produce serious adverse health effects. SCs were originally synthesized by research laboratories to investigate the endocannabinoid system or as potential therapeutic drugs because they interact with cannabinoid receptors. Currently, however, they have reappeared through the Internet as designer drugs, so-called "legal highs". The number of SCs, their chemical diversity, the rate at which they emerge and the lack of commercial availability of reference standards for (metabolites of) many compounds: all these factors make it particularly challenging for the toxicologist to keep up with the detection and monitoring of this group of compounds. Moreover, given the high potency of many SCs, they are only present at very low concentrations in biological matrices (typically low or even sub-ng/ml levels in blood or urine), adding further to the challenge. Approaches to detect SCs in biological matrices encompass immunoassays, targeted and untargeted (high resolution) mass spectrometry-based methods and, more recently, bio-assays. Recent developments will be presented in this workshop, which aims at providing the participant with insight into the possibilities and challenges of the different strategies that have been deployed for the detection of synthetic cannabinoids in biological matrices.

Learning Objectives:

1. Provide the participant with a good insight into the issues associated with the detection of synthetic cannabinoids in biological matrices.
2. Provide the participant with a good insight into recent and novel strategies that have been deployed for detection of synthetic cannabinoids in biological matrices.
3. Provide the participant with a critical insight into the possibilities, as well as the limitations, of the different strategies that have been deployed for detecting synthetic cannabinoids in biological matrices.

Instructors:

Volker Auwärter, PhD, Professor, Institute of Forensic Medicine, Forensic Toxicology, Medical Center – University of Freiburg, Germany
Christophe P. Stove, PhD, Professor, Laboratory of Toxicology, Ghent University, Belgium
Barry K. Logan, PhD, Chief Scientist, NMS Labs, Inc., Willow Grove, PA
Jurgen Kempf, PhD, Institute of Forensic Medicine, Forensic Toxicology, Medical Center – University of Freiburg, Germany

Akira Ishii, Professor and Chairperson, Nagoya University Graduate School of Medicine, Japan
Annelies Cannaert, PhD Student, Laboratory of Toxicology, Ghent University, Belgium
Marilyn Huestis, PhD, Senior Scientific Advisor, NMS Labs, Inc.
Lukas Mogler, PharmD, Institute of Forensic Medicine, Forensic Toxicology, Medical Center – University of Freiburg, Germany
Franco Tagliaro, Professor of Forensic Medicine, University of Verona, Italy

Agenda:

1:30-1:50 pm	Setting the Scene: Synthetic Cannabinoids. Where Do They Come From, What are the Risks and Challenges?	Volker Auwärter Christophe Stove
1:50-2:15 pm	Synthetic Cannabinoid Testing in Suspected Impairment Driving Casework	Barry Logan
2:15-2:40 pm	LC-ion-trap-MS for the Screening of Synthetic Cannabinoids in Clinical or Forensic Samples	Jürgen Kempf
2:40-3:05 pm	HRMS Screening and GC/MS/MS-based Isomeric Differentiation of SCs and Their Metabolites	Akira Ishii
3:05-3:30 pm	Bio-assay-based Screening of Synthetic Cannabinoids: Adding a New Spice to the Toxicologist's Palette	Annelies Cannaert
3:30-4 pm	Afternoon Break: Time To Spice Up Your Caffeine Level	
4-4:25 pm	Analyzing Synthetic Cannabinoids in Human Urine and Rat Plasma	Marilyn Huestis
4:25-4:50 pm	Targeted Approach for Synthetic Cannabinoid Metabolite Screening in Urine Samples	Lukas Mogler
4:50-5:15 pm	An Integrated Strategy to Monitor the Use of Synthetic Cannabinoids Based on the Analysis of Keratinized Tissues	Franco Tagliaro
5:15-5:30 pm	Spic(e)y Discussion	

Keywords: NPS, Synthetic Cannabinoids, Screening and Confirmation Strategies

Workshop #9: Death Investigation: A Step by Step Guide to Postmortem Toxicology

8 am-12 pm Sunday, September 10
Royal Palm Ballroom 7-10

Chairs: Craig N. Chatterton, PhD, Deputy Chief Toxicologist, Office of the Chief Medical Examiner, Edmonton, Alberta, Canada
M. David Osselton, PhD, Professor, Head of Archaeology, Anthropology and Forensic Science, Bournemouth University, United Kingdom

Abstract: The success of a forensic post-mortem investigation that is suspected to involve drugs or poisons depends on the toxicologist and pathologist/medical examiner working closely together as a team. The pathologist relies on the expertise and experience of the toxicologist and specialized, analytical skills of the toxicology laboratory to provide answers concerning the presence of drugs in autopsy specimens. In order for this to be successful, the toxicologist relies on the pathologist to provide appropriate specimens for analysis. Drugs and poisons are not uniformly distributed within the body and may redistribute after death as a consequence of post-mortem changes. It is widely acknowledged that post-mortem drug concentrations do not necessarily reflect concentrations at the time of death. The audience will be educated on the importance of appropriate autopsy sample collection, the analytical un-suitability of poor quality samples and the risks associated with offering an interpretation on such samples. The effects of poor quality sampling will be highlighted through a series of real case examples, which will also highlight recent trends observed in deaths associated with illicit drug use, for example, fentanyl and associated analogs. The audience will be educated on the added value that multi-sample analysis can provide, for example: the use of vitreous fluid to confirm alcohol ingestion and increase the chances of detecting 6-acetylmorphine following heroin use, and the use of hair samples to investigate historic drug use. Finally, the audience will learn to understand and appreciate the concept of postmortem redistribution (PMR) and the processes that cause it. The audience will also understand some of the other processes that cause blood concentrations of drugs to increase after death and the impact that can have on the accurate interpretation of toxicology results.

Learning Objectives:

1. To consider the likelihood and potential impact of postmortem redistribution when offering interpretation on analytical results.
2. To emphasize the importance of appropriate sample collection procedures and highlight the analytical issues that are commonly encountered when processing postmortem samples in the toxicology laboratory.
3. The process of assigning a cause and manner of death is challenging. This workshop will help demonstrate the added value of a close working relationship between the analytical toxicologists, the interpretive scientist, the forensic pathologist and others involved in death investigation.

Instructors:

Craig N. Chatterton, PhD, Deputy Chief Toxicologist, Office of the Chief Medical Examiner, Edmonton, Alberta, Canada
M. David Osselton, PhD, Professor, Head of Archaeology, Anthropology and Forensic Science, Bournemouth University, United Kingdom
Pascal Kintz, Prof, PharmD, PhD, X-Pertise Consulting, France
Simon Elliott, PhD, Managing Director, Alere Forensics
Graham Jones, PhD, Chief Toxicologist, Office of the Chief Medical Examiner, Edmonton, Alberta, Canada

Agenda:

8-8:40 am	Sample Collection: Best Practice Guidelines. The Do's and the Please Don't	Craig Chatterton
8:40-9:20 am	Post Mortem Toxicology Sample Selection	David Osselton
9:20-10 am	A Thorough Investigation: Analytical Approaches and Challenges Associated with Postmortem Samples	Simon Elliott
10-10:30 am	Morning Break	
10:30-11:05 am	Hair Analysis Applications	Pascal Kintz
11:05 am-12 pm	Postmortem Redistribution and Other Factors Affecting the Interpretation of Toxicology Results	Graham Jones

Keywords: Postmortem Redistribution, Autopsy Sample Collection, Forensic Pathology

Workshop #10: In the Cross Hairs with Forensic Toxicology and Hair Analysis

1:30-5:30 pm Sunday, September 10
Valencia
Chairs: Madeline A. Montgomery, BS, Unit Chief, Chemistry, FBI Laboratory, Quantico, VA
Roman P. Karas, BS, Forensic Toxicology Examiner, FBI Laboratory, Quantico, VA

Abstract: Hair testing for drugs is of growing interest in the forensic science community. The scope of testing ranges from long-term postmortem analysis, to the detection of analytes following a single exposure. Hair analysis has also been used for pre-employment screening, as well as for probationary reasons. Advantages of using hair to test for drugs include the ability to get a longer term picture of drug exposure and the non-invasive nature of sample collection. Disadvantages include a reduced number of laboratories that actively perform hair testing, and some disagreement in the community over the interpretation of results. Although hair testing for drugs has been performed globally for decades, it has not taken off in the United States as much as it has in some other countries. Reasons for this may include the fact that testing hair is more complicated than the analysis of traditional toxicology matrices and results of testing may be more challenging to interpret.

Learning Objectives:

1. Expose attendees to the mechanisms involved in the incorporation of drugs into hair, the specifics of the analysis of drugs in hair such as washing of hair, pretreatment and analytical methods, and current applications of forensic testing for drugs in hair.
2. Discuss the interpretation of hair testing results including examples of how hair testing has been used in forensic toxicology casework.
3. Compare and contrast advances in hair testing for drugs in multiple nations.

Instructors:
Roman P. Karas, BS, Forensic Toxicology Examiner, FBI Laboratory, Quantico, VA
Dimitri Gerostamoulos, PhD, Chief Toxicologist & Head, Forensic Science, Victorian Institute of Forensic Medicine, Monash University, Australia
Markus R. Baumgartner, PhD, Head of Department, Zurich Institute of Forensic Medicine, Center for Forensic Hair Analytics, Switzerland
Alberto Salomone, PhD, Laboratory Supervisor, Regional Anti-doping and Toxicology Center, Italy
Thomas Kraemer, PhD, Head of Department, Zurich Institute of Forensic Medicine, Department of Forensic Pharmacology and Toxicology, Switzerland
Cynthia Morris-Kukoski, PhD, Forensic Examiner Toxicologist, FBI Laboratory, Quantico, VA
Madeline A. Montgomery, BS, Unit Chief, Chemistry, FBI Laboratory, Quantico, VA

Agenda:

1:30-2 pm	Overview of Hair Anatomy and Growth Factors	Roman Karas
2-2:30 pm	Interpretation of Hair Drug Results – It Isn't Straight Forward	Dimitri Gerostamoulos

2:30-3 pm	Interpretation of Hair Results (Single and multiple dose/segmentation/metabolic ratios)	Markus Baumgartner
3-3:30 pm	Interpretation of Novel Psychoactive Drug Results in Real Hair Samples	Alberto Salomone
3:30-4 pm	Afternoon Break	
4-4:30 pm	Single Hair Analysis (State of the Art and Proof of Concept of Hair Testing)	Thomas Kraemer
4:30-5 pm	Forensic Toxicology Applications at the FBI Laboratory	Cynthia Morris-Kukoski
5-5:30 pm	Open Forum on Controversy in Forensic Hair Testing	Roman Karas and Madeline Montgomery

Keywords: Hair Testing, Sample Preparation, Interpretation

Workshop #11: Drug-Facilitated Crime in the 21st Century
Sponsored by the Joint SOFT/TIAFT Drug-Facilitated Crime Committee

8 am-5:30 pm Monday, September 11
Royal Palm Ballroom 7-10

Chairs: Teri L. Stockham, MSFS, PhD, Forensic Toxicology Consultant, Teri Stockham, PhD, Inc.
Lisa J. Reidy, PhD, NRCC, Director, Toxicology Laboratory, University of Miami, Miami, FL

Abstract: This workshop is an official offering of the joint SOFT/TIAFT Drug-Facilitated Crime Committee. This workshop describes the update of a set of minimum analytical performance limits for the toxicological investigation of suspected Drug-Facilitated Crimes (DFC) as recommended by Society of Forensic Toxicologists (SOFT) Drug-Facilitated Crimes (DFC) committee and the Organization of Scientific Area Committees (OSAC). The workshop will provide examples of the methodologies used by laboratories performing DFC case work and how the performance limits are used to improve the laboratory capabilities in this crucial area of forensic toxicology. The workshop will educate the attendee about the broad scope of DFC cases with specific examples and information regarding the relationship between toxicology and human trafficking. The workshop also presents some of the latest research on ethanol and its effects on witness memory.

Learning Objectives:

1. Become familiar with the analytical recommendations and methodologies used in DFC casework.
2. Learn how toxicology applies to human trafficking and other DFC cases.
3. Learn how ethanol affects witness memory and its implications in DFC victim recall.
4. Learn about the challenges involved in the prosecution of DFC.

Instructors:
Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Joshua Seither, MS, Laboratory Supervisor, Toxicology Laboratory, University of Miami, Miami, FL
Dimitri Gerostamoulos, PhD, Chief Toxicologist & Head, Forensic Science, Victorian Institute of Forensic Medicine, Monash University, Australia
Sarah Wille, PhD, Forensic Toxicology Expert, National Institute for Criminalistics and Criminology, Belgium
Jane Anderson, Esq, Attorney Advisor, Aequitas: The Prosecutors' Resource on Violence Against Women
Nadja Schreiber Compo, PhD, Associate Professor, Co-director Legal Psychology Graduate Program, Florida International University, Miami, FL
Cynthia Morris-Kukoski, PhD, Forensic Examiner Toxicologist, FBI Laboratory, Quantico, VA
Diane M. Boland, PhD, F-ABFT, Director of Toxicology, Miami-Dade Medical Examiner Department, Miami, FL
Nele Samyn, PhD, PharmD, National Institute of Criminalistics and Criminology, Belgium

Laura Adams, Esq, Assistant State Attorney, Chief of Felonies, Lead Prosecutor for Sexual Assault Crimes, Miami-Dade State Attorney's Office, Miami, FL

Agenda:

8-8:05 am	Welcome & Introduction	Teri Stockham
8:05-8:30 am	DFC & OSAC Committee Cut-off Guideline /Recommendations	Marc LeBeau
8:30-10 am	Analytical Approach to Achieving the Guidelines/Recommendations	Joshua Seither, Dimitri Gerostamoulos Sarah Wille
10-10:30 am	Morning Break	
10:30-11:15 am	Toxicology & Human Trafficking	Jane Anderson
11:15 am-12 pm	Alcohol and Witness Memory	Nadja Schreiber Compo
12-1:30 pm	Lunch Break	
1:30-2:15 pm	Alcohol & Witness Memory	Nadja Schreiber Compo
2:15-3:30 pm	Case Studies	Cynthia Morris-Kukoski Diane Boland Dimitri Gerostamoulos Nele Samyn
3:30-4 pm	Afternoon Break	
4-5 pm	Prosecuting DFC Crimes	Laura Adams
5-5:30pm	Panel Q&A	Panel Discussion

Keywords: Drug-Facilitated Crime, Ethanol and Memory, Analytical Toxicology

Workshop #12: From the Street to the Lab: Updated Trends and Case Reports for Novel Psychoactive Substances

8 am-5:30 pm Monday, September 11
Royal Palm Ballroom 1-4

Chairs: Sherri L. Kacinko, Toxicologist, NMS Labs, Inc., Willow Grove, PA
Dani C. Mata, Forensic Scientist III, Orange County Crime Laboratory, Santa Ana, CA

Abstract: Toxicologists are frequently called upon to determine whether or not substances played a role in an antemortem or postmortem case. The increased prevalence of Novel Psychoactive Substances (NPS) has increased the complexities of testing and interpretation of routine case-work. NPS are commonly used as alternatives to illegal substances or in an attempt to avoid detection in routine workplace testing and may be implicated in cases of impaired driving or drug facilitated crimes. There have been numerous reports of NPS disguised as legitimate pharmaceutical products leading to the possibility of overdosing as many people do not even know what they are taking, thereby complicating death investigations. Analysis can be tricky due to the constant change of drugs found on the streets. The emergence and widespread availability of many designer drugs over the last few years supports the need to continually expand our knowledge regarding not only the analytical techniques but also the pharmacology of these drugs. This workshop will start with talks about resources for identifying emerging drugs and trends throughout the USA and the world and a discussion on the analytical challenges faced by a laboratory interested in performing NPS testing. The workshop will then focus on the various classes of NPS including Synthetic Cannabinoids, Opiates, Hallucinogens and Stimulants. An overview of the pharmacology and case reports of each class will be presented. Finally, in recognition that many of these cases involve poly-drug use, there will be a discussion on cases involving combinations of NPS with common drugs of abuse, prescribed and over-the counter medications.

Learning Objectives:

1. After attending this presentation attendees will be able to list sources available to them to investigate appearance of novel psychoactive substances and see trends both within the United States and Internationally.
2. Given a toxicology report with positive findings for Novel Psychoactive Substances such as synthetic cannabinoids or designer opioids, attendees will be able to give a brief summary of the pharmacology of the NPS compounds.
3. After attending this presentation attendees will be able to explain the implications of multi-drug toxicity including NPS in post-mortem casework.

Instructors:

Sherri L. Kacinko, Toxicologist, NMS Labs, Inc., Willow Grove, PA
David Wood, MD, Consultant Physician & Clinical Toxicologist, Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom
Robert Kronstrand, PhD, Research Strategist, National Board of Forensic Medicine, Sweden
Svante Vikingsson, PhD, Linköping University, Sweden

Simon Pichini, PhD, National Institute of Health
Francesco Paolo Busardo', MD, MSc, DipFMS, PhD, Sapienza University of Rome, Italy
Justin Brower, Forensic Toxicologist, North Carolina Office of the Chief Medical Examiner, Cary, NC
Dani C. Mata, Forensic Scientist III, Orange County Crime Laboratory, Santa Ana, CA
Carl J. Schmidt, MD, University of Michigan, Detroit, MI
Emma Lew, MD, Director, Miami-Dade Medical Examiner Department, Miami, FL

Agenda:

8-8:05	Introduction	Sherri Kacinko Dani Mata
8:05-8:50 am	Keeping Pace in the NPS Race: US Resources and Trends	Sherri Kacinko
8:50-10 am	Keeping Pace in the NPS Race: International Resources and Trends	David Wood
10-10:30 am	Morning Break	
10:30-11:15 am	Strategies and Considerations for NPS Testing in the Forensic Toxicology Lab	Robert Kronstrand Svante Vikingsson
11:15-12 pm	Case Reports: Synthetic Cannabinoids – They're Still Out There	Simona Pichini Francesco Busardo
12-1:30 pm	Lunch Break	
1:30-2:15 pm	Pharmacology and Postmortem Considerations of Novel Stimulants and Hallucinogens	Justin Brower
2:15-2:45pm	Mitragynine – New Use of an Old Plant	Dani Mata
2:45-3:30 pm	Epidemiology of Drug Abuse in Southeastern Michigan	Carl Schmidt
3:30-4 pm	Afternoon Break	
4-4:45 pm	Case Report: Multi-Drug Toxicity	Emma Lew
4:45-5:00 pm	Panel Discussion / Questions	

Keywords: Novel Psychoactive Substances, Pharmacology, Case Reports

Workshop #13: Screening by LC-MS/MS: Techniques, Trends, and Limitations

8 am-5:30 pm Monday, September 11
Royal Palm Ballroom 5-6

Chairs: Dirk K. Wissenbach, PhD, University Hospital Jena, Institute of Forensic Medicine, Germany.
Herbert Oberacher, Associate Professor, Institute of Legal Medicine, Medical University of Innsbruck, Austria

Abstract: From an experimental technique in the 1990 liquid chromatography (LC) coupled to tandem mass spectrometry (MS/MS) is nowadays widely used in clinical and forensic toxicology due to its high sensitivity especially for hydrophilic and thermolabile compounds. Several different LC-MS/MS screening concepts including targeted and untargeted analysis and low resolution and high-resolution MS of different vendors became more and more imported during the last years. Different LC-MS/MS databased providing reference MS/MS spectra were available. However modern MS experiment types such as data independent acquisition in combination with wide(er) MS/MS precursor isolation are recent trends in LC-MS/MS screening. These new techniques provide additional benefits, such as even higher sensitivities and lessen common back draws of LC-MS/MS reference databases such as low inter instrument reproducibility. Additionally, modern peak matching algorithms provide better screening results especially with regard to inter instrument reproducibility. Aim of the workshop is to provide an overview on different recent low and high-resolution LC-MS/MS screening concepts including LC-MS/MS reference databases. In addition to the benefits of the different LC-MS/MS screening approaches, limitations of the applied techniques is provided. Current trends in MS experiments such as data independent acquisition in combination with wide(er) MS/MS precursor isolationare critically discussed with regard to the screening result and inter instrument reproducibility.

Learning Objectives:

1. Provide participants with an overview on the recent state of the art low and high resolution LC-MS/MS screening concepts. including their limitations.
2. After the workshop, participants should be able to critically decide if LC-MS/MS screening should be applied. In addition, this workshop might be useful to decide which LC-MS/MS screening technique should be introduced into the participant's laboratory.

Instructors:
Franck Saint-Marcoux, Professor, Department of Pharmacology and Toxicology – Limoges University Hospital, France
Dirk K. Wissenbach, PhD, University Hospital Jena, Institute of Forensic Medicine, Germany.
Ilkka Ojanperä, Professor, University of Helsinki and National Institute for Health and Welfare, Helsinki, Finland
Markus Meyer, PhD, Professor, Institute for Pharmacology and Toxicology, Saarland University, Germany
Thomas Kraemer, PhD, Head of Department, Zurich Institute of Forensic Medicine, Department of Forensic Pharmacology and Toxicology, Switzerland

Michael Poetzsch, PhD, Chief Instrumental Analytics, Zurich Institute of Forensic Medicine, Department of Forensic Pharmacology and Toxicology, Switzerland
Laura M. Huppertz, Institute of Forensic Medicine, Freiburg, Germany
Herbert Oberacher, Associate Professor, Institute of Legal Medicine, Medical University of Innsbruck, Austria
Hans H. Maurer, PhD, Professor, Saarland University, Department of Experimental and Clinical Toxicology, Homberg, Germany

Agenda:

8-8:45 am	Screening with Low Resolution: Is this a Prehistorical Approach?	Franck Saint-Marcoux
8:45-9:30 am	Untargeted Low Resolution Drug Screening Peripheral or Routinely Applicable?	Dirk K. Wissenbach
9:30-10 am	Discussion: Low Resolution Screening Approaches	
10-10:30am	Morning Break	
10:30-11:15am	Application of Targeted High Resolution Screening	Ilkka Ojanperä
11:15-12 pm	Role of LC-HRMS/MS Based Untargeted Screening in Analytical Toxicology	Markus Meyer
12-1:30pm	Lunch Break	
1:30-2:15pm	DIA, IDA, DDA, SWATH or MSALL for STA/GUA – D.O.A.?	Thomas Kraemer Michael Pöetzsch
2:15-3 pm	Application of Modern HRMS Techniques to Forensic Screening	Laura Huppertz
3-3:30 pm	Discussion: High Resolution and Modern Screening Approaches	
3:30-4 pm	Afternoon Break	
4-4:45 pm	Tandem Mass Spectral Databases for Forensic Compound Identification	Herbert Oberacher
4:45-5:30 pm	LC-(HR)MS – All Problems Solved	Hans Maurer

Keywords: Low Resolution LC-MS/MS, High Resolution LC-MS/MS, Screening Concepts

Workshop #14: Where the Wild Things Are – Method Development

8 am-12 pm Monday, September 11
Estate Ballroom

Chairs: Sue Pearring, MS, Criminalist III, Santa Clara County Crime Laboratory, San Jose, CA
Rebecca Wagner, PhD, Research Analyst, Virginia Department of Forensic Science

Abstract: SWGTOX and SOFT have successfully promoted the method validation guidelines and have spread the know-how to do this well. However, what happens before validation is critical to smooth and successful validations. Method development is often poorly done or overlooked altogether, making the process much more challenging than is necessary. Whether new instrumentation or increased scope of testing, administrative, managerial and technical requirements must be thoroughly considered. Case-working analysts tasked with research and designated research analysts share their contrasting experiences and insights. Instrumentation and methodology-specific developments will be discussed, highlighting the unique solutions to respective challenges.

Learning Objectives:

- Understanding the distinct requirements and challenges of method development and how to critically plan for the technical and administrative considerations.
- Develop strategies in development to maximize probability of successes in validation by sharing and learning from one another's successes and failures.
- Impress the impact strong and consistent communication between developers and management can have on the fluidity of development and validation.

Instructors:

Dani C. Mata, Forensic Scientist III, Orange County Crime Laboratory, Santa Ana, CA
Sue Pearring, MS, Criminalist III, Santa Clara County Crime Laboratory, San Jose, CA
Ciena Bayard, Forensic Toxicologist / Method Development Manager, District of Columbia, Office of the Chief Medical Examiner, Washington, DC
Rebecca Wagner, PhD, Research Analyst, Virginia Department of Forensic Science
Jason Hudson, PhD, Toxicology Section Chief, Alabama Department of Forensic Sciences
Mark Burry, MS, Criminalist III, Santa Clara County Crime Laboratory, San Jose, CA

Agenda:

8-9 am	Where to Start	Dani Mata, Sue Pearring
9-9:30 am	ELISA Development	Dani Mata
9:30-10 am	Qualitative Methods	Ciena Bayard
10-10:30 am	Morning Break	
10:30-11:00 am	LCMSMS Development	Rebecca Wagner
11-11:30 am	TOF/QTOF Development	Jason Hudson
11:30 am-12 pm	Tips for First Timers	Mark Burry

Workshop #15: Avoiding Agitation with Method Validation

1:30-5:30 pm Monday, September 11
Estate Ballroom

Chairs: Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Frank T. Peters, PhD, Head of Toxicology, Institute of Forensic Medicine, Jena University Hospital, Germany

Abstract: A number of authoritative organizations have proposed guidelines and standard practices for method validation in both clinical and forensic toxicology. This **Workshop** is designed to compare and contrast some of these different approaches, as well as provide recommendations to streamline the validation of analytical methods. Emphasis will be made on how to develop a validation plan, as well as suggestions for addressing unique situations. Attendees will benefit from group exercises that will allow for open discussion as to how to handle a number of real-life situations when planning validation experiments within a toxicology laboratory.

Learning Objectives:

- Compare and contrast validation guidelines and standards from different organizations.
- Explain the value of a validation plan.
- Participate in group exercises that address real-life laboratory situations related to method validation.

Instructors:
Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Sarah Wille, PhD, Forensic Toxicology Expert, National Institute for Criminalistics and Criminology, Belgium
Frank T. Peters, PhD, Head of Toxicology, Institute of Forensic Medicine, Jena University Hospital, Germany

Agenda:

1:30-1:45 pm	Welcome and Overview	Marc LeBeau
1:45-3:30 pm	Comparison of Validation Parameters from Different Guidelines and Standards	Sarah Wille
3:30-4 pm	Afternoon Break	
4-4:30 pm	Validation Plans, Streamlining, and Special Situations	Frank Peters
4:30-5:25 pm	Exercises and Review	Marc LeBeau, Frank Peters, & Sarah Wille
5:25-5:30 pm	Closing Remarks	Marc LeBeau

Keywords: Method Validation, Validation Plan, Validation Streamlin

Workshop #16: SWGTOX, OSAC, AND ASB: How the Heck Do They Impact Me?

8 am-12 pm Monday, September 11
Addison Ballroom

Chairs: Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Melissa S. Kennedy, MS, D-ABFT-FA, Accreditation Manager, ANSI-ASQ National Accreditation Board, Cary, NC
Fiona Couper, PhD, State Toxicologist, Washington State Patrol, Seattle, WA

Abstract: In recent years, a number of documents have been developed to standardize the field of forensic toxicology. Much of the work in this area in the United States has been done by three groups: the Scientific Working Group for Forensic Toxicology (SWGTOX); the Toxicology Subcommittee of the Organization of Scientific Area Committees (OSAC); and the Academy Standards Board (ASB) of the American Academy of Forensic Sciences. This workshop will give attendees a better understanding of the history of these organizations, the process they follow to develop standards and guidelines, and the planned "roadmap" for the groups. Overviews and the up-to-date status of draft documents on the following topics will be discussed: measurement traceability; uncertainty of measurement; method validation; quality control; minimum testing requirements; mass spectrometry data evaluation; identification criteria; breath alcohol measuring instrument calibration; opinions and testimony; as well as report content.

Learning Objectives:

1. List at least three draft toxicology documents authored by SWGTOX or the OSAC.
2. List at least one ASB Standard document for the field of forensic toxicology.
3. Explain the relationship between the SWGTOX, OSAC, and ASB.

Instructors:

Marc A. LeBeau, PhD, F-ABFT, Senior Forensic Scientist, FBI Laboratory, Quantico, VA
Dustin Tate Yeatman, MS, F-ABFT, F-ABC, Chemistry / Toxicology Manager, Palm Beach County Sheriff's Office Crime Laboratory
Ruth E. Winecker, PhD, F-ABFT, Chief Toxicologist, North Carolina Office of the Chief Medical Examiner, Raleigh, NC
Sumandeep Rana, PhD, Director of Laboratory Operations & Technology, Redwood Toxicology Laboratory
Melissa S. Kennedy, MS, D-ABFT-FA, Accreditation Manager, ANSI-ASQ National Accreditation Board, Cary, NC
Marilyn A. Huestis, PhD, Senior Scientific Advisor, NMS Labs, Inc.
Robert Johnson, PhD, F-ABFT, Chief Toxicologist, Tarrant County Medical Examiner's Office, Fort Worth, TX
Madeline A. Montgomery, BS, Unit Chief, Chemistry, FBI Laboratory, Quantico, VA
Fiona Couper, PhD, State Toxicologist, Washington State Patrol, Seattle, WA

Agenda:

8-8:15 am	Welcome and History of SWGTOX, OSAC, and ASB	Fiona Couper
8:15-8:45 am	Measurement Traceability and Uncertainty of Measurement	Dustin Tate Yeatman
8:45-9:15 am	Quality Control Document Overview	Ruth Winecker
9:15-9:45 am	Mass Spectrometry Data Evaluation	Sumandeep Rana
9:45-10 am	Breath Alcohol Measuring Instrument Calibration	Melissa Kennedy
10-10:30am	Morning Break	
10:30-11 am	Identification Criteria	Marilyn Huestis
11-11:20 am	Minimum Requirements for Toxicological Testing	Robert Johnson
11:20-11:40 am	Report Content / Opinions and Testimony	Madeline Montgomery
11:40-12 pm	Future Documents / Question and Answer	Marc LeBeau

Keywords: OSAC, ASB, Standards

Workshop #17: Measurement Traceability and Measurement Uncertainty In Forensic Toxicology: An Overview

1:30-5:30 pm Monday, September 11
Addition Ballroom

Chairs: Dustin Tate Yeatman, MS, F-ABFT, F-ABC, Chemistry / Toxicology Manager, Palm Beach County Sheriff's Office Crime Laboratory
Nicholas Tiscione, MS, D-ABFT, Senior Forensic Scientist, Palm Beach County Sheriff's Office Crime Laboratory

Abstract: The Justice System relies on forensic evidence more today than ever before. It is therefore critical that forensic laboratories provide analytical results that are not only reliable and accurate, but also comparable. Reliability, uniformity, consistency, and comparability of forensic analytical results are a necessity and thus the fundamental reasons for establishing measurement traceability and measurement uncertainty. The workshop will focus on the impact of revisions to ISO/IEC 17025 and the work within the OSAC and the Academy Standards Board to establish documentary consensus standards for toxicology laboratories in the United States as it relates to these topics. Based on these documents, a review of Measurement Traceability and Measurement Uncertainty and their inextricable link will be provided. An overview of the basic process for establishing measurement traceability and estimating measurement uncertainty along with strategies for implementation and presentation in a court of law will be provided.

Learning Objectives:

1. Provide an understanding of the relationship between Measurement Traceability and Measurement Uncertainty.
2. Provide and understanding of the concept of Measurement Uncertainty and approaches to estimating measurement uncertainty.
3. Provide and update on the status of OSAC Measurement Traceability and Measurement Uncertainty Standards for Toxicology.

Instructors:

Dustin Tate Yeatman, MS, F-ABFT, F-ABC, Chemistry / Toxicology Manager, Palm Beach County Sheriff's Office Crime Laboratory
Laurel J. Farrell, BA, Senior Accreditation Manager, ANSI-ASQ National Accreditation Board, Cary, NC
Mark Ruefenacht, Forensic Meterologist, Contract NIST Metrology Instructor and Researcher

Agenda:

1:30-2:15 pm	Standards for Measurement Traceability and Measurement Uncertainty: Are We There Yet?	Tate Yeatman
2:15-3:30 pm	Basics of Measurement Traceability	Laurel Farrell and Mark Ruefenacht
3:30-4 pm	Afternoon Break	
4-5:30 pm	Measurement Uncertainty – Concepts and Approaches	Laurel Farrell and Mark Ruefenacht

Keywords: Uncertainty, Traceability, OSAC