

TUESDAY WORKSHOPS

Pre-Registration Required--\$250

W14 Transfer and Persistence of Physical Evidence: Deciphering Implications

Tuesday, February 14, 2023

8:30 AM - 4:30 PM

CE Hours: 6.0

Learning Overview: After attending this workshop, attendees will appreciate the various forms of physical evidence transfer and how they apply to a diverse range of traces (e.g., DNA, hairs, fibers, paint, gunshot residue, DNA, blood, ignitable liquids, patterns), their implications in the assessment and interpretation of analytical results, and their impact on the possible reconstruction of events.

Impact Statement: This workshop will impact the forensic science community by increasing attendees' overall evidence awareness and their comprehension of how the concepts of transfer and persistence profoundly affect both the assessment and interpretation of physical evidence.

Program Description: Through a series of lectures and hands-on experiments, attendees will gain an appreciation of the nuances of transfer and persistence of various types of traces, as well as the interrelationships between them that support a holistic interpretation.

Chair:

Brooke W. Kammrath, PhD

University of New Haven
West Haven, CT

Co-Chair:

Elaine M. Pagliaro, JD

Henry C. Lee Institute of Forensic Science
Orange, CT

Presenters:

Henry C. Lee, PhD

Henry C. Lee Institute of Forensic Science
West Haven, CT

David San Pietro, PhD

University of New Haven
West Haven, CT

Claire L. Glynn, PhD

University of New Haven
West Haven, CT

Peter R. De Forest, DCrim

CUNY
Greenburgh, NY

Pauline E. Leary, PhD

KD Analytical
Louisville, KY

Targeted Audience: Criminalistics, Jurisprudence

Knowledge Level Required: Basic

Program:

8:30 AM – 8:45 AM	Introduction <i>Brooke W. Kammrath, PhD; Elaine M. Pagliaro, JD</i>
8:45 AM – 9:15 AM	Transfer & Persistence: Lessons Learned <i>Henry C. Lee, PhD</i>
9:15 AM – 9:45 AM	Transfer & Persistence of DNA—Current Knowledge and Implications <i>David San Pietro, PhD</i>
9:45 AM – 10:00 AM	DISCUSSION
10:00 AM – 10:30 AM	BREAK
10:30 AM – 11:00 AM	Transfer & Persistence of Fibers, Drugs, Ignitable Liquids, and More—Current Knowledge and Implications <i>Brooke W. Kammrath, PhD</i>
11:00 AM – 12:00 PM	Hands-On Transfer & Persistence Activities: DNA, Fibers, and More <i>Pauline E. Leary, PhD; Claire L. Glynn, PhD</i>
12:00 PM – 1:00 PM	BREAK
1:00 PM – 2:30 PM	Hands-On Transfer & Persistence Activities: DNA, Fibers, and More (cont'd) <i>Pauline E. Leary, PhD; Claire L. Glynn, PhD</i>
2:30 PM – 3:00 PM	Discussion of Transfer & Persistence Activities <i>Pauline E. Leary, PhD; Claire L. Glynn, PhD</i>
3:00 PM – 3:30 PM	BREAK
3:30 PM – 4:00 PM	Transfer & Persistence: Legal Precedents and Implications <i>Elaine M. Pagliaro, JD</i>
4:00 PM – 4:30 PM	Deciphering Transfer & Persistence: A Holistic View <i>Peter R. De Forest, DCrim</i>

W15 SNP Genotyping for Extended Kinship

Tuesday, February 14, 2023

8:30 AM - 5:00 PM

CE Hours: 7.0

Learning Overview: Presenters will discuss topics surrounding the use of SNP genotypes for extended kinship, particularly for the purpose of forensic genetic genealogy (FGG). The objective of the workshop is to provide attendees with a greater understanding of the use of SNPs in extended kinship and to bring awareness to the areas of concern that laboratories and the forensic community should consider as this type of testing moves forward.

Impact Statement: FGG and the use of SNPs for extended kinship gained worldwide attention following the identification and arrest of Joseph James DeAngelo, Jr., otherwise known as the Golden State Killer, in 2018. Since that time, FGG has been used to generate new leads and help identify missing persons in numerous cold cases where other avenues of investigation have been exhausted. The use of SNPs for extended kinship has been a major focus of law enforcement and forensic laboratories alike and, due to the speed with which it has been implemented, has been subject to limited legislation (e.g., guidelines or standards). Presentations in this workshop will impact the forensic community by contributing to a broader understanding of the SNP genotyping technologies available for various forensic sample types, existing tools for analysis, interpretation considerations and limitations. Additionally, updates will be provided regarding other relevant factors, such as policy, ethics and databasing.

Program Description: This workshop will cover subjects related to the use of single nucleotide polymorphism (SNP) genotyping for extended kinship. The ability to obtain SNP genotypes from various forensic sample types will be explored, from the use of high-density SNP genotyping arrays for high quality samples to hybridization capture and targeted or whole genome sequencing for more challenging samples. Software and bioinformatic approaches available for the analysis of the resultant data will be presented, as well as implementation considerations, such as privacy concerns, validation and accreditation. The workshop will close with insight into what case/sample criteria offer the best genealogical success.

Chair:

Erin M. Gordon, MFS
Signature Science, LLC

Co-Chair:

Charla Marshall, PhD
AFMES-AFDIL and SNA International, LLC
Dover AFB, DE

Presenters:

David A. Russell, MSB
Signature Science, LLC
Verona, VA

Michelle Peck, MFS
Signature Science, LLC

Jacqueline T. Thomas, MSFS
Signature Science, LLC

Kimberly Andreaggi, PhD
Signature Science, LLC

Daniele Podini, PhD
The George Washington University
Washington, DC

Rebecca S. Just, PhD
National Bioforensic Analysis Center (NBFAC)

Andreas Tillmar, PhD
National Board of Forensic Medicine
SWEDEN

Stephen Turner, PhD
Signature Science, LLC

Katherine Gettings, PhD
NIST
Gaithersburg, MD

Jodi Irwin, PhD
FBI Laboratory

Matthew Gamette, MS

Idaho State Police
Meridian, ID

Ray A. Wickenheiser, DPS, MBA

New York State Police Crime Lab System
Albany, NY

Tynan Peterson, MA

ThroughLine Consultants

Melanie T. Armstrong, BA

ThroughLine Consultants

Targeted Audience: General, Path/Bio

Knowledge Level Required: Basic

Program:

8:30 AM – 8:40 AM

Introduction

Erin M. Gordon, MFS; Charla Marshall, PhD

8:40 AM – 9:05 AM

Validated Microarray-Based SNP Genotyping Method for Forensic DNA Laboratories

David A. Russell, MSB

9:05 AM – 9:30 AM

Determination of Validated Kintelligence Thresholds for Application to Forensic Genetic Genealogy

Michelle Peck, MFS

9:30 AM – 9:55 AM

Validation of Hybridization Capture Enrichment with a 95000 SNP Panel for Forensic Identification of Military Unknowns

Jacqueline T. Thomas, MSFS

9:55 AM – 10:10 AM

Discussion

10:10 AM – 10:25 AM

BREAK

10:25 AM – 10:50 AM

Power of the FORCE—A Novel SNP Panel for Forensic Applications

Kimberly Andreaggi, PhD

10:50 AM – 11:15 AM

Nuclear SNP Recovery in Rootless Hair Shafts

Daniele Podini, PhD

11:15 AM – 11:40 AM

Evaluation of SNP Concordance Across Multiple Panels and Assays

Erin M. Gordon, MFS

11:40 AM – 12:05 PM

SNP Mixture Deconvolution for FGG

Rebecca S. Just, PhD

12:05 PM – 12:20 PM

Discussion

12:20 PM – 1:20 PM

BREAK

1:20 PM – 1:45 PM	SNP Genotype Imputation in Forensics—How Does it Work? <i>Andreas Tillmar, PhD</i>
1:45 PM – 2:10 PM	Benchmarking Open Source Software for SNP-Based Kinship Analysis in Forensic Samples <i>Stephen Turner, PhD</i>
2:10 PM – 2:35 PM	Reference Materials and Support for SNP Implementation <i>Katherine Gettings, PhD</i>
2:35 PM – 3:00 PM	SWGDAM Interpretation Guidelines for Single Nucleotide Polymorphisms <i>Jodi Irwin, PhD</i>
3:00 PM – 3:15 PM	Discussion
3:15 PM – 3:30 PM	BREAK
3:30 PM – 3:55 PM	The Path for Forensic Investigative Genetic Genealogy Implementation in Public Laboratories <i>Matthew Gamette, MS</i>
3:55 PM – 4:20 PM	Ethical Considerations and Privacy Concerns Surrounding IGG <i>Ray A. Wickenheiser, DPS, MBA</i>
4:20 PM – 4:45 PM	It's Not Rocket Science: The Art of Evaluating Cases for Forensic Genetic Genealogy <i>Tynan Peterson, MA; Melanie T. Armstrong, BA</i>
4:45 PM – 5:00 PM	Discussion

Pre-Registration Required—\$225

W16 Practical Cardiovascular Pathology for Medical Examiners: Basic Concepts and Advanced Principles

Tuesday, February 14, 2023

8:30 AM - 5:00 PM

CE Hours: 6.75

Learning Overview: After attending this workshop, attendees will have an enhanced knowledge base of cardiovascular pathology, as seen in a busy forensic autopsy practice. An approach to dissection techniques and microscopic sampling will also be emphasized. Molecular testing, and an overview of congenital heart disease, will additionally be discussed. Attendees will build skills to identify challenges in cardiac assessments at autopsy and develop techniques to address both common and unusual pathologies. Attendees will be exposed to various specimens through didactic presentations, case-based discussions, and real-time commentary on previously recorded videos.

Impact Statement: This workshop will impact the forensic science community by emphasizing the multifaceted nature of cardiovascular pathology in the setting of forensic autopsy. Didactic lectures, as well as practical instruction by use of detailed anatomical images, will be given to advance autopsy performance and competency, with an additional focus on improving awareness of potentially heritable conditions that may require notification of decedent relatives. This workshop's target audience includes forensic pathologists/medical examiners, pathology fellows and residents, physician assistants, and medical students.

Program Description: This workshop will discuss several topics related to basic and advanced knowledge pertaining to cardiac pathology at forensic autopsy. Topics will range from basic heart anatomy to special dissection techniques and microscopic examination of uncommon entities. Recommendations on how to handle heart specimens in challenging cases will also be provided. Didactic presentations, case-based discussions, videos of heart pathologies detailing traditional and special dissection techniques, and interesting heart histology cases will be shown and commented on by forensic and cardiac pathologists on-site. Interaction with attendees will also be encouraged during the workshop session.

Chair:

Lorenzo Gitto, MD

Cook County Medical Examiner's Office
Chicago, IL

Co-Chair:

Ponni Arunkumar, MD

Cook County Medical Examiner's Office
Chicago, IL

Presenters:

Sarah Thomas, MD

Office of the District 21 Medical Examiner
Fort Myers, FL

Gregory Webster, MD

Ann & Robert H. Lurie Children's Hospital of Chicago
Chicago, IL

Targeted Audience: General, Pathology/Biology

Knowledge Level Required: Basic

Program:

8:30 AM – 8:45 AM

Workshop Introduction

Lorenzo Gitto, MD; Ponni Arunkumar, MD

8:45 AM – 9:15 AM

Cardiac Pathology and the Medical Examiner

Ponni Arunkumar, MD

9:15 AM – 9:45 AM	Heart Anatomy, Histology, Physiology <i>Sarah Thomas, MD; Gregory Webster, MD</i>
9:45 AM – 10:15 AM	Atherosclerosis, Hypertension, Ischemic Heart Disease <i>Lorenzo Gitto, MD</i>
10:15 AM – 10:45 AM	BREAK
10:45 AM – 11:00 AM	Sudden Cardiac Death <i>Ponni Arunkumar, MD; Gregory Webster, MD</i>
11:00 AM – 11:45 AM	Congenital Heart Diseases <i>Lorenzo Gitto, MD; Sarah Thomas, MD</i>
11:45 AM – 12:15 PM	Cardiomyopathies <i>Gregory Webster, MD</i>
12:15 PM – 1:15 PM	BREAK
1:15 PM – 1:35 PM	Infections <i>Lorenzo Gitto, MD</i>
1:35 PM – 2:00 PM	Trauma and Artifacts <i>Ponni Arunkumar, MD</i>
2:00 PM – 3:00 PM	Heart Dissection: Traditional and Special Techniques <i>Lorenzo Gitto, MD; Sarah Thomas, MD</i>
3:00 PM – 3:15 PM	BREAK
3:15 PM – 4:00 PM	Cardiac Sampling and Histopathology <i>Lorenzo Gitto, MD; Sarah Thomas, MD</i>
4:00 PM – 4:30 PM	Genetic and Molecular Studies <i>Gregory Webster, MD</i>
4:30 PM – 5:00 PM	Discussion and Questions

Pre-Registration Required—\$225

W17 A First Look at the Draft Recommendations in the Report of the National Institute of Standards and Technology/National Institute of Justice (NIST/NIJ) Expert Working Group on Human Factors in Forensic DNA Interpretation

Tuesday, February 14, 2023

8:30 AM - 5:00 PM

CE Hours: 6.0

Learning Overview: After attending this workshop, participants will have a deeper understanding of human factors. They will be familiar with the findings and recommendations presented in the report of the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation. Participants will understand the purpose and implications of these recommendations for their own practice (i.e., individual-, team-, and organization-level) and how the recommendations serve to improve the practice of DNA interpretation. Participants will be invited to critique the recommendations and discuss how relevant and feasible they are to their practice and the wider forensic DNA community.

Impact Statement: The study of human factors in forensic science is essential to inform our understanding of the interaction between humans and the systems they use. Understanding human factor issues can identify and mitigate the potential for error and bias. Furthermore, we can develop ways to shape positive laboratory culture, improve staff morale, and increase work productivity. This workshop presents three years' worth of effort to understand human factors as they apply to forensic DNA interpretation. This workshop will impact the forensic science community by guiding DNA analysts, laboratory leadership, researchers, educators, and legal practitioners on how to recognize and address human factors influences within DNA analysis and interpretation and, as a result, aid in mitigating the effects of these human factors in justice outcomes.

Program Description: In this workshop, we will walk participants through the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation process to develop the report, highlight key findings, discuss some of the more controversial topics, and present a "first look" at the draft recommendations.

Chair:

Lynn Garcia, JD

Texas Forensic Science Commission
Austin, TX

Co-Chair:

Tiffany A. Roy, JD

ForensicAid
West Palm Beach, FL

Presenters:

Nikola Osborne, PhD

Human Factors Training and Consultancy
Auckland, AUSTRALIA

Melissa Taylor, MD

NIST
Gaithersburg, MD

Angela Spessard, MSFS

Maryland State Police
Pikesville, MD

Jarrah R. Kennedy, BS

Kansas City Police Crime Laboratory
Kansas City, MO

Mikalaa M. Martin, BS

RTI International
Greenville, SC

Targeted Audience: General, Jurisprudence, Pathology/Biology

Knowledge Level Required: Basic

Program:

8:30 AM – 9:00 AM

Participant & Facilitator Introductions

Lorenzo Gitto, MD; Ponni Arunkumar, MD

9:00 AM – 10:30 AM

Introduction to the NIST/NIJ Expert Working Group Series

Melissa Taylor, MD

Introduction to Key Concepts Used Throughout the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation Report

Nikola Osborne, PhD; Mikalaa M. Martin, BS

Management and Work Environment in a DNA Laboratory

Lynn Garcia, JD; Melissa Taylor, MD

10:30 AM – 11:00 AM

BREAK

11:00 AM – 12:00 PM

Interpretation and Technology in DNA Analysis

Nikola Osborne, PhD

Expressing Evidence Strength in DNA Analysis

Mikalaa M. Martin, BS; Jarrah R. Kennedy, BS

12:00 PM – 1:00 PM

BREAK

1:00 PM – 3:00 PM

Reporting and Testimony in DNA Analysis

Tiffany A. Roy, JD; Jarrah R. Kennedy, BS

Education, Training, and Professional Credentialing in DNA Analysis

Lynn Garcia, JD

3:00 PM – 3:30 PM

BREAK

3:30 PM – 5:00 PM

QA/QC in DNA Analysis

Jarrah R. Kennedy, BS; Mikalaa M. Martin, BS

Research in DNA Analysis

Nikola Osborne, PhD

Final Thoughts

W18 Identification, Analysis, and Interpretation of Blunt Force Skeletal Trauma

Tuesday, February 14, 2023

8:30 AM - 5:00 PM

CE Hours: 6.5

Learning Overview: Upon completion of this workshop, attendees should be able to: (1) provide an overview of current methods across disciplines for identification and analysis of blunt force skeletal trauma; (2) identify and analyze blunt force skeletal trauma utilizing X-rays, Computed Tomography (CT) scans, photographs, and 3D virtual models; and (3) collaborate with experts across disciplines for a multidisciplinary approach to skeletal trauma interpretation

Impact Statement: This workshop will impact the forensic science community by providing attendees the unique and informative opportunity to identify, analyze, and interpret blunt force skeletal trauma in cases with known loading conditions and event data, including instrumentation output, high-speed video, and post-test imaging.

Program Description: This workshop presents an overview of current methods in blunt force skeletal trauma analysis with a hands-on opportunity for attendees to gain a unique experience and to put these methods to practice. Attendees will gain hands-on experience in identifying, analyzing, and interpreting known skeletal trauma, which is a rare occurrence in forensic sciences. They will also have the distinct opportunity to see exactly how the trauma occurred. All cases included in this workshop are experimental cases of blunt force trauma; therefore, attendees will have access to data collected throughout the entire research design. Specifically, beyond the bone itself, they will be able to evaluate fracture timing, high-speed videos to visualize the response during the event, post-test photographs and radiographs of documented injuries, and 3D models to assist in visualizing skeletal trauma and re-creating the traumatic event. Foundational concepts will be discussed first in a single element situation, then will transition to the complex whole body situation. This workshop is designed for a broad, multidisciplinary audience and the intention is for the participants to work with colleagues in varying fields to expand their experiences and evaluations. Forensic science is inherently multidisciplinary, but trauma analysis in particular requires a variety of experts. Therefore, this opportunity facilitates communication among colleagues and subsequently substantiates the importance of an interdisciplinary approach to trauma analysis. This novel workshop provides attendees with a hands-on experience in identifying and analyzing skeletal trauma from known loading mechanisms to facilitate an increased understanding of the relationship between trauma mechanism and fracture characteristics, ultimately improving interpretations in real-world cases.

Chair:

Angela L. Harden, PhD

The Ohio State University
Columbus, OH

Co-Chair:

John H. Bolte, IV, PhD

The Ohio State University
Columbus, OH

Presenters:

Amanda M. Agnew, PhD

The Ohio State University
Columbus, OH

Kyra Stull, PhD

University of Nevada Reno
Reno, NV

Christopher M. Goden, MA

The Ohio State University
Columbus, OH

Targeted Audience: Anthropology, Criminalistics, Engineering & Applied Sciences, General, Pathology/Biology

Knowledge Level Required: Intermediate

Program:

8:30 AM – 8:45 AM	Welcome and Introduction <i>Angela L. Harden, PhD; John H. Bolte, IV, PhD</i>
8:45 AM – 9:15 AM	Impact of Multidisciplinary Research <i>Amanda M. Agnew, PhD; Kyra E. Stull, PhD</i>
9:15 AM – 9:30 AM	Overview of Single Element Cases <i>Angela L. Harden, PhD</i>
9:30 AM – 10:15 AM	Case 1—Hands-on Skeletal Trauma Analysis <i>Angela L. Harden, PhD; John H. Bolte, IV, PhD; Amanda M. Agnew, PhD; Kyra E. Stull, PhD; Christopher M. Goden, MA</i>
10:15 AM – 10:30 AM	BREAK
10:30 AM – 11:00 AM	Case 1—Review and Discussion <i>Angela L. Harden, PhD; Kyra E. Stull, PhD</i>
11:00 AM – 11:30 AM	Case 2—Hands-on Skeletal Trauma Analysis <i>Angela L. Harden, PhD; John H. Bolte, IV, PhD; Amanda M. Agnew, PhD; Kyra E. Stull, PhD; Christopher M. Goden, MA</i>
11:30 AM – 12:00 PM	Case 2—Review and Discussion <i>Angela L. Harden, PhD; Amanda M. Agnew, PhD</i>
12:00 PM – 1:30 PM	BREAK
1:30 PM – 1:45 PM	Overview of Whole Body Cases <i>John H. Bolte, IV, PhD</i>
1:45 PM – 2:30 PM	Case 3—Hands-on Skeletal Trauma Analysis <i>Angela L. Harden, PhD; John H. Bolte, IV, PhD; Amanda M. Agnew, PhD; Kyra E. Stull, PhD; Christopher M. Goden, MA</i>
2:30 PM – 3:00 PM	Case 3—Review and Discussion <i>John H. Bolte, IV, PhD; Amanda M. Agnew, PhD</i>
3:00 PM – 3:15 PM	BREAK
3:15 PM – 4:00 PM	Case 4—Hands-on Skeletal Trauma Analysis <i>Angela L. Harden, PhD; John H. Bolte, IV, PhD; Amanda M. Agnew, PhD; Kyra E. Stull, PhD; Christopher M. Goden, MA</i>
4:00 PM – 4:30 PM	Case 4—Review and Discussion <i>John H. Bolte, IV, PhD; Amanda M. Agnew, PhD</i>
4:30 PM – 5:00 PM	Panel Discussion and Closing Remarks <i>Angela L. Harden, PhD; John H. Bolte, IV, PhD; Amanda M. Agnew, PhD; Kyra E. Stull, PhD; Christopher M. Goden, MA</i>

Pre-Registration Required—\$225

W19 Forensic Photography: Photography Basics to Imaging Beyond the Visible Spectrum With Alternate Light Sources (ALS) and Infrared (IR)

Tuesday, February 14, 2023

8:30 AM - 6:00 PM

CE Hours: 7.5

Learning Overview: After attending this presentation, attendees will understand how to properly utilize a Digital Single-Lens Reflex (DSLR) camera in the manual mode. Attendees will also learn how to visualize and image evidence requiring the use of ALS, Ultraviolet (UV), and IR energy. Common types of evidence requiring the use of ALS for visualization and imaging include semen, saliva, urine, gunshot and explosive residue, fluorescent fingerprint powders, hairs/fibers, inks utilized in fraudulent document cases, and other trace evidence. Attendees will learn how to utilize their cell phone cameras to scan evidence for traces of blood and Gunshot Residue (GSR). Attendees will also be exposed to utilizing ALS, including IR energy, to scan for subcutaneous bruising, obliterated tattoos, and obliterated writing with multiple inks.

Impact Statement: This presentation will impact the forensic science community by informing attendees that whatever the level of understanding of photography may be in the visible spectrum, the crime scene professionals' understanding of photography in the UV and IR spectrums, or spectra outside the visible, remains an elusive concept. With this lack of understanding comes missed opportunities to locate, visualize, and properly capture photographically, evidence that is likely crucial in verifying that a reported crime occurred or to refute a false allegation.

Program Description: Crime scene and forensic photography within the visible spectrum of light remains the most utilized and thorough means of documenting crime scenes, autopsy findings, physical injury, and forensic evidence. Despite being the most utilized method of documentation, the lack of proper understanding, training, experience and equipment results in photography being underutilized, or at least not utilized to its fullest potential.

Chair:

Bryan W. Brendley, PhD
Methodist University
Fayetteville, NC

Co-Chair:

David Pauly, MFS
Methodist University
Fayetteville, NC

Presenter:

Steve Downs, DBA
Methodist University
Fayetteville, NC

Targeted Audience: Anthropology, Criminalistics, General

Knowledge Level Required: Basic

Program:

8:30 AM – 10:30 AM

Overview of the Exposure Triangle

David Pauly, MFS

10:30 AM – 11:00 AM

BREAK

11:00 AM – 12:00 PM

**Practical Exercise on Taking Various Crime Scene Images with Different Lenses—
Normal Perspective, Wide Angle, Zoom, and Macro/Micro**

Steve Downs, DBA

12:00 PM – 1:00 PM

Exploration of Lighting Techniques

Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA

1:00 PM – 2:00 PM

BREAK

2:00 PM – 3:00 PM

Overview of Photography Outside the Visible Spectrum—Alternate Light Source Photography

David Pauly, MFS

3:00 PM – 3:30 PM

BREAK

3:30 PM – 4:30 PM

Practical Exercise on Imaging Forensic Evidence Beyond the Visible Spectrum

Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA

4:30 PM – 5:00 PM

Overview on Imaging Beyond 700nm in the Infrared Radiation Spectrum

David Pauly, MFS

5:00 PM – 6:00 PM

Practical Exercise of Imaging Evidence in the IR Spectrum

Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA

Pre-Registration Required—\$125

W20 A Gentle Introduction to the Likelihood Ratio (LR): Basic Ideas, Implementation, and Limitations

Tuesday, February 14, 2023

8:30 AM - 12:00 PM

CE Hours: 3.25

Learning Overview: Participants in this workshop will understand the basic idea behind the ILR and how to correctly interpret results from an LR analysis. They will also understand some of the challenges that must still be resolved before the LR can be used in a wide range of forensic disciplines.

Impact Statement: Forensic scientists are increasingly expected to provide a quantitative, data-based assessment of the strength of the evidence in favor of a proposition. The LR approach has emerged as a plausible approach to do so. Yet, correctly arriving at and interpreting those assessments requires some understanding of the statistical foundations of the LR approach. This presentation will impact the forensic science community by presenting foundations and best practices in an accessible, easy to follow format, aiming to increase the statistical and quantitative literacy of forensic practitioners and provide them with the background they need to more confidently work with LRs.

Program Description: This workshop will focus on the LR approach to evaluating evidence. The LR is a one-number summary that quantifies the weight of the evidence in favor of the prosecution's or the defense's propositions. While the basic idea behind the LR is simple and intuitive, the challenges arise when trying to implement the approach on different types of evidence. Presenters will discuss the statistical foundations of the LR, but will spend significant time on examples, applications in different forensic disciplines, best practices, and limitations.

Chair:

Alicia L. Carriquiry, PhD

CSAFE—Iowa State University

Ames, IA

Co-Chair:

Michael J. Salyards, PhD

CSAFE—Iowa State University

Ames, IA

Presenter:

Danica M. Ommen, PhD

Iowa State University

Ames, IA

Targeted Audience: Anthropology, Criminalistics, Digital & Multimedia Science, Engineering & Applied Sciences, General, Jurisprudence, Odontology, Toxicology

Knowledge Level Required: Basic

Program:

8:30 AM – 8:45 AM

Motivating the Application of Quantitative Approaches to Evaluate Science

Michael J. Salyards, PhD

8:45 AM – 9:15 AM

A Gentle Introduction to Basic Statistical Ideas: Conditional Probabilities, Bayes Rule, Statistical Models, and Examples

Alicia L. Carriquiry, PhD

9:15 AM – 10:00 AM

Formulating Propositions and the Corresponding Likelihood Ratios: Examples from Biological and Trace Disciplines

Danica M. Ommen, PhD

10:00 AM – 10:15 AM

BREAK

10:15 AM – 10:45 AM

The Special Case of Pattern Comparison Disciplines and the Score-Based Likelihood Ratio (SLR)

Alicia L. Carriquiry, PhD

10:45 AM – 11:15 AM

FRStats as an Example of SLR in Practice

Michael J. Salyards, PhD

11:15 AM – 11:45 AM

The ENSFI Qualitative LR (QLR) and Other Odds and Ends

Danica M. Ommen, PhD

11:45 AM – 12:00 PM

Discussion and Questions

W21 Implementing Forensic Investigative Genetic Genealogy (FIGG): How to Put Figg Into Practice (Without Messing It Up for Everyone Else)

Tuesday, February 14, 2023

8:30 AM - 12:00 PM

CE Hours: 3.0

Learning Overview: After attending this workshop, attendees will better understand: (1) the standards and policies being created for and by the forensic community; (2) a comparative study of the different technologies available and data-driven guidance on when to use each; (3) database hygiene and best practices for using FIGG databases in alignment with the Interim Department Of Justice (DOJ) policy and evolving terms of services; (4) how to prepare and what to consider when bringing FIGG in-house; and (5) case studies and practical guidance for learning investigative techniques from the perspective of law enforcement.

Impact Statement: This workshop will impact the forensic science community by providing the most up-to-date information on the policies, procedures, and best practices associated with putting FIGG into practice in an operational forensic environment. Attendees will receive summaries of all standards and policies presented. Example checklists for implementation, data evaluations, and comparisons will be made available. By sharing experiences and knowledge, the community can build a framework for a system that works together on a wider, coordinated scale.

Program Description: This workshop will provide scientific, experiential, and collaborative guidance on the critical aspects of a FIGG workflow, namely, emerging standards and policy, DNA technologies and limitations, genealogical databases and terms of use, investigative genealogical skill-building, and laboratory implementation planning. Practical experience and implementation options will be focused by a discussion of how real world cases are solved, which will guide operational and policy choices. Experts from forensic laboratories, law enforcement, and industry will present their consensus, data, and guidance to provide a toolkit for the forensic community to apply to their own investigations.

Chair:

Ray A. Wickenheiser, DPS

New York State Police Crime Lab System
Albany, NY

Presenters:

Kameran Wong, BS

Verogen
San Diego, CA

Connie Bormans, PhD

Gene by Gene
Houston, TX

Steven Smugeresky, BA

Montgomery County Police Department
Gaithersburg, MD

Swathi A. Kumar, PhD

GEDmatch
San Diego, CA

Mandi S. Van Buren, MPharm

Kern Regional Crime Laboratory
Bakersfield, CA

Targeted Audience: Criminalistics, General, Jurisprudence

Knowledge Level Required: Basic

Program:

8:30 AM – 8:40 AM

Welcome and Introductions to Speakers

Ray A. Wickenheiser, PhD

8:40 AM – 9:20 AM

Standards and Policy From the FIGG Steering Committee

Ray A. Wickenheiser, PhD

9:20 AM – 10:00 AM

FIGG Technology Comparisons: A Breakdown of all the Options, and When to Use What

Connie Bormans, PhD

10:00 AM – 10:15 AM

BREAK

10:15 AM – 10:55 AM

FIGG Database Hygiene: Bridging the Gap Between External Policy & Internal Practice

Swathi A. Kumar, PhD

10:55 AM – 11:35 AM

Preparing for Implementation: What to Think About and How to Bring on FIGG

Mandi S. Van Buren, MPharm

11:35 AM – 12:00 PM

Learning FIGG: Advice From Law Enforcement on How to Learn Investigative Genetic Genealogy

Steven Smugeresky, BA

Pre-Registration Required—\$150

W22 An Introduction to Document Security

Tuesday, February 14, 2023

8:30 AM - 12:00 PM

CE Hours: 3.00

Learning Overview: After attending this workshop, attendees will have a better understanding of what constitutes a “secure document,” including the features that comprise those documents, and how those different features and elements function and interact.

Impact Statement: This workshop will impact the forensic science community, particularly law enforcement personnel and document examiners, by helping attendees to better understand what they are looking at when handling and examining a variety of documents, and be better able to recognize the variety of production and design features that make documents secure, thereby enhancing that security.

Program Description: This workshop will provide attendees with an overview of the fundamentals and methods of document security, with an emphasis on securing items such as identification documents, financial instruments, and commercial products. This workshop will introduce participants to the printing methods used in the production of secure documents as well as the types of substrates used for various documents. Additional elements covered will include security features such as optically variable devices and digital elements (barcodes and chips) as well as issues related to design and production.

Chair:

Carolyn Bayer-Broring, MFS

Immigration & Customs Enforcement
Derwood, MD

Co-Chair:

Elaine X. Wooton, MFS

Homeland Security Investigations
McLean, VA

Targeted Audience: Criminalistics, General, Jurisprudence, Questioned Documents

Knowledge Level Required: Basic

Program:

8:30 AM – 8:45 AM	Introduction of Speakers and Overall Topic <i>Carolyn Bayer-Broring, MFS; Elaine X. Wooton, MFS</i>
8:45 AM – 9:30 AM	Security Substrates <i>Carolyn Bayer-Broring, MFS</i>
9:30 AM – 10:00 AM	Optically Variable Features <i>Elaine X. Wooton, MFS</i>
10:00 AM – 10:15 AM	BREAK
10:15 AM – 11:00 AM	Security Printing <i>Carolyn Bayer-Broring, MFS</i>
11:00 AM – 11:30 AM	Digital Elements <i>Elaine X. Wooton, MFS</i>
11:30 AM – 12:00 PM	Design & Supply Chain Considerations <i>Elaine X. Wooton, MFS</i>

Pre-Registration Required—\$125

W23 Report Writing in a New Rule 702 World—Handwriting Comparison Examination

Tuesday, February 14, 2023

8:30 AM - 12:30 PM

CE Hours: 3.75

Learning Overview: Upon completion of this workshop, participants will be able to understand the potential impact on admissibility of expert testimony under a proposed new Rule 702. Participants will also be introduced to new ideas in report writing and, more importantly, the reasoning behind these changes. The contents of reports will hold added importance under the new Rule 702. Participants will also have begun the process of gaining foundational experience in making these changes to their reports so that the reaction by the forensic community can be proactive rather than reactive. In addition, laboratory management will be aware of the potential to all forensic disciplines and proactively engage all disciplines in the necessary report modifications with sufficient time to develop foundational experience.

Impact Statement: Changes in Rules of Evidence pertaining to the admissibility of expert testimony have historically been accompanied by wide-ranging and diverse rulings from courts across the country as the judiciary struggles with the impact of these changes. It should be anticipated that non-uniform rulings will also accompany changes to Rule 702 of the Federal Rules of Evidence and any corresponding changes to state rules of evidence. This workshop will impact the forensic science community by providing an increased understanding of the likely results of the rule changes, which will allow forensic scientists to proactively address the coming challenges by answering questions before they are asked. As a result, proactive responses to the rule changes will decrease rulings of unnecessary exclusions or limitations.

Program Description: Recently, an advisory committee for the Judicial Conference of the United States' Committee on Rules of Practice and Procedure recommended significant changes to Federal Rules of Evidence Rule 702, pertaining to the admissibility of expert witness testimony. While this specific recommendation is for federal jurisdiction, such changes commonly trickle down to state jurisdictions, and no exception can be expected for this matter. As such, it is important for forensic scientists to be aware of the changes and how they may impact testimony in the near future. It is anticipated that the new rule, if passed as expected, will take effect around December 2023. One of the main changes is the added emphasis for a judge's gatekeeping role for each individual proffer of expert testimony, and it is anticipated that judges will become active in that responsibility under the new rule. So how will that affect forensic science testimony? When the United States Supreme Court changed the basic admissibility requirements for expert testimony based on *Frye* to what is now called the *Daubert* Guidelines, the judiciary responded with less-than-uniform rulings. The results were a marked increase in exclusions in spite of the overall statement that *Daubert* was suppose to be a "lower" bar than *Frye*. While we cannot predict the future under any modified Rule 702, we can certainly look to bolster our report writing in order to proactively minimize any potential negative impacts that could occur. This workshop will explore the potentials and provide recommendations for writing reports that will help stand the test of future Rule 702 scrutiny.

Chair:

Thomas W. Vastrick, BSc
Apopka, FL

Co-Chair:

Kevin P. Kulbacki, MSFS
KDX Forensic Consulting, LLC
Chicago, IL

Targeted Audience: Questioned Documents

Knowledge Level Required: Basic

Program:

8:30 AM – 9:00 AM

Overview of Challenge

Thomas W. Vastrick, BSc

9:00 AM – 10:00 AM

Recommendations and Bases

Thomas W. Vastrick, BSc

10:00 AM – 10:20 AM

BREAK

10:20 AM – 12:00 PM

Writing the Report Principles

Thomas W. Vastrick, BSc; Kevin P. Kulbacki, MSFS

12:00 PM – 12:30 PM

Discussion

Thomas W. Vastrick, BSc; Kevin P. Kulbacki, MSFS

Pre-Registration Required—\$125

W24 Public Health Initiatives Informing Forensic Laboratory Practice

Tuesday, February 14, 2023

1:00 PM - 5:00 PM

CE Hours: 3.75

Learning Overview: The goals of this workshop are: (1) the identification of projects in the public health space that focus on substance use; (2) increase understanding of how public health data is influenced by limitations of forensic laboratories; and (3) to foster relationships between public health and forensic laboratories.

Impact Statement: This workshop will impact the forensic science community by connecting forensic practitioners with information put forth by public health officials.

Program Description: After attending this workshop, participants will have an increased awareness of how coordination with public health initiatives can serve the forensic science community by providing information that can assist forensic laboratories in focusing their efforts on implementing changes using data-driven decision making.

Chair:

Donna Papsun, MS

NMS Labs

Horsham, PA

Co-Chair:

Amanda Mohr, MS

CFSRE

North Wales, PA

Presenters:

Margaret Warner, PhD

CDC National Center for Health Statistics

Takoma Park, MD

Aaron M. Shapiro, PhD

BC Provincial Toxicology Centre

Vancouver, BC, CANADA

Amy Miles, BS

Wisconsin State Lab of Hygiene

Madison, WI

Kate Goodin, MPH

Tennessee Department of Health

Nashville, TN

Alexandra Evans, MFS

DC Department of Forensic Sciences

Washington, DC

Diane Calello, MD

Rutgers New Jersey Medical School

Newark, NJ

Rachel Clark, BA

DanceSafe

San Diego, CA

Alex J. Krotulski, PhD

CFSRE

Willow Grove, PA

Barry K. Logan, PhD

CFSRE

Willow Grove, PA

Targeted Audience: Criminalistics, General, Pathology/Biology, Toxicology

Knowledge Level Required: Basic

Program:

- 1:00 PM – 1:05 PM **Introduction**
Donna Papsun, MS
- 1:05 PM – 1:20 PM **Providing a Public Health/Safety Service While Testing EDM Music Festival Attendees**
Amanda Mohr, MS
- 1:20 PM – 1:40 PM **How Public Health Data is Influenced by Forensic Laboratories**
Margaret Warner, PhD
- 1:40 PM – 2:00 PM **Use of Forensic Data in Public Health in Canada: Challenges, Opportunities, and Future Directions**
Aaron M. Shaprio, PhD
- 2:00 PM – 2:20 PM **Association of Public Health Laboratories (APHL) Opioids Biosurveillance Task Force (OBFT)**
Amy Miles, BS
- 2:20 PM – 2:40 PM **A Public Health Epidemiologist's View on Data Sources for Overdose and Drug Surveillance Activities**
Kate Goodin, MPH
- 2:40 PM – 2:55 PM **BREAK**
- 2:55 PM – 3:15 PM **Public Health Drug Surveillance Through Analysis of Needle-Exchange Syringes**
Alexandra Evans, MFS
- 3:15 PM – 3:35 PM **Toxic: Toxicology-Surveillance in a Clinical Setting**
Diane Calello, MD
- 3:35 PM – 3:55 PM **DanceSafe: Promoting Health & Safety Within Music and Nightlight Communities**
Rachel Clark, MD
- 3:55 PM – 4:15 PM **Downstream Impacts of Data Collected From Drug Checking and Harm Reduction Initiatives**
Alex J. Krotulski, PhD
- 4:15 PM – 4:35 PM **Serving Both Public Health and the Forensic Sciences as a Research Institution**
Barry K. Logan, PhD
- 4:35 PM – 5:00 PM **Panel Discussion**

Pre-Registration Required—\$125

W25 What Did the Lab Bench Say to the Court Bench? And What Did the Court Bench Hear?

Tuesday, February 14, 2023

1:30 PM - 5:00 PM

CE Hours: 3.75

Learning Overview: After attending this workshop, attendees will be more aware of how forensic science standards are being implemented in laboratories and the impact of these standards in court.

Impact Statement: The use of forensic science standards is increasing exponentially in laboratories and the court system. This workshop will impact the forensic science community by informing attendees about how these standards are being used, and why standards should be adopted in laboratories.

Program Description: This workshop will present the views and experiences of laboratory practitioners, accreditation experts, attorneys, and judges pertaining to the use of forensic science standards in court.

Chair:

Linton Mohammed, PhD

Forensic Science Consultants, Inc.
Poway, CA

Co-Chair:

Pamela A. W. King, JD

State of Minnesota
Rochester, MN

Presenters:

Mary C. McKiel, PhD

American Academy of Forensic Sciences
Arnold, MD

Lucy A. Davis, BHS

LDH Consultants, LLC
Pikeville, KY

Kris Cano, MA

Scottsdale PD Crime Laboratory
Scottsdale, AZ

Pamela Sale, BS

ANSI National Accreditation Board
Milwaukee, WI

Ray A. Wickenheiser, DPS

New York State Police Crime Lab System
Albany, NY

Terri Rosenblatt, JD

New York County District Attorney's Office
Albany, NY

Raymond Valerio, JD

Queens District Attorney
Kew Gardens, NY

Stephanie Domitrovich, PhD

Senior Judge of Pennsylvania
Erie, PA

Targeted Audience: Anthropology, Criminalistics, Digital & Multimedia Sciences, Engineering & Applied Sciences, General, Jurisprudence, Odontology, Pathology/Biology, Psychiatry & Behavioral Science, Questioned Documents, Toxicology

Knowledge Level Required: Basic

Program:

1:30 PM – 1:50 PM	The Complex World of Science and Standard <i>Kris Cano, MA</i>
1:50 PM – 2:10 PM	Accreditation: How a Non-Adversarial Process Gets Used in an Adversarial System <i>Pamela Sale, BS</i>
2:10 PM – 2:30 PM	Practical Aspects of Standards Implementation in Crime Laboratories <i>Ray A. Wickenheiser, DPS</i>
2:30 PM – 3:00 PM	Panel Discussion
3:00 PM – 3:20 PM	BREAK
3:20 PM – 3:40 PM	Standards Are Important to Admissibility, But Standards are Not the Same as Admissibility <i>Terri Rosenblatt, JD</i>
3:40 PM – 4:00 PM	The Prosecutor's View <i>Raymond Valerio, JD</i>
4:00 PM – 4:20 PM	The Interplay Between the Standards and Their Use in the Courtroom <i>Stephanie Domitrovich, PhD</i>
4:20 PM – 4:50 PM	Panel Discussion
4:50 PM – 5:00 PM	Questions and Answers

W26 Taming the Wild West of Workflows for Opioids: Emerging and Controversial Drug Threats

Tuesday, February 14, 2023

1:30 PM - 5:00 PM

CE Hours: 3.25

Learning Overview: After attending this workshop, attendees will have: a greater awareness of forensic workflows and how they may impact test results; a greater understanding of the challenges in adjusting standardized workflows to address opioids and emerging drugs; and a better appreciation for the importance of accurate substance data and how stakeholders rely on that accuracy.

Impact Statement: This workshop will impact the forensic science community by providing information about technological developments and improved workflows for various types of drug testing (toxicology and seized drugs) by discussing the components of a standardized forensic workflow, by showing the effects of deviations or preemptive testing on comprehensiveness, sensitivity and specificity of the test, and by discussing the compliance of test results with emerging standards in forensic science and the acceptance of those results in court and by other pertinent stakeholders.

Program Description: After attending this presentation, attendees will be able to discuss standardized workflows that are being adopted to better meet regulatory requirements, safety, efficiency, and timeliness in the fields of forensic drug testing, whether in a traditional lab setting, in the autopsy suite, or in the field.

Chair:

Agnes D. Winokur, MS
Drug Enforcement Agency
Miami, FL

Co-Chair:

Michael F. Rieders, PhD
NMS Labs
Horsham, PA

Presenters:

M.J. Menendez, JD
NMS Labs
Horsham, PA

Reta Newman, MA
Pinellas County Forensic Laboratory
Largo, FL

Daniel T. Anderson, MS
NMS Labs
Castle Rock, CO

Brianna Peterson, PhD
NMS Labs
Castle Rock, CO

Barry K. Logan, PhD
CFSRE
Willow Grove, PA

James L. Caruso, MD
Denver Office of the Medical Examiner
Denver, CO

Wendy B. Stephan, PhD
Florida Poison Information Center
Miami, FL

Targeted Audience: Criminalistics, General, Jurisprudence, Pathology/Biology, Toxicology

Knowledge Level Required: Basic

Program:

- 1:30 PM – 1:40 PM **Introduction and Updates From the AAFS Opioids and Emerging Drugs Ad-hoc Committee**
Agnes D. Winokur, MS
- 1:40 PM – 2:05 PM **Taking the Lab into the Field—Challenges and Tradeoffs for the Point of Use Testing**
Barry K. Logan, PhD
- 2:05 PM – 2:35 PM **The Good, Bad, and the Ugly Regarding Standardized Workflows**
Daniel T. Anderson, MS; Brianna Peterson, PhD
- 2:35 PM – 3:00 PM **How Are Opioids and Emerging Drugs Affecting Seized Drug Analysis Workflows**
Reta Newman, MA
- 3:00 PM – 3:15 PM **BREAK**
- 3:15 PM – 3:45 PM **The Pathology Perspective—Testing Complexities and Interpreting Results**
James L. Caruso, MD
- 3:45 PM – 4:15 PM **Importance of Accurate Substance Data for Poison Control Center Case Management and Prevention Activities**
Wendy B. Stephan, PhD
- 4:15 PM – 4:45 PM **Legal Questions Arising from Changes to Forensic Workflows Involving New Technologies**
MJ Menendez, JD
- 4:45 PM – 5:00 PM **Questions and Answers**