PROGRAM

February 19-24, 2024
Denver, Colorado
Colorado Convention Center
#AAFS2024
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Bring Your Own Slides Form                                  176
## OFFICERS AND OFFICIALS

### Officers

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<tr>
<td>President</td>
<td>C. Ken Williams, MS, JD</td>
</tr>
<tr>
<td>President-Elect</td>
<td>Christopher Thompson, MD</td>
</tr>
<tr>
<td>Past President</td>
<td>Laura Fulginiti, PhD</td>
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<tr>
<td>Vice President</td>
<td>Joanna Collins, MFS</td>
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<tr>
<td>Treasurer</td>
<td>James Caruso, MD</td>
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<td>Secretary</td>
<td>Sarah Kerrigan, PhD</td>
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### Directors

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<tr>
<td>Anthropology</td>
<td>Gregory Berg, PhD</td>
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<td>Jamie Ferrell, MBA</td>
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<td>Claire Shepard, MS</td>
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### Section Officers

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<tr>
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<td>Krista Latham, PhD</td>
<td>Debra Zinni, PhD</td>
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<td>Peter Diaczuk, PhD</td>
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<td>Kathryn Seigfried-Spellar, PhD</td>
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<td>Carole Chaski, PhD</td>
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<td>Robin Ainsworth, DDS</td>
<td>Denise Murmann, DDS</td>
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### 2024 Program Committee

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<thead>
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<tr>
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<td>Matthew Wood, PhD</td>
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<td>Karen Rosenbaum, MD</td>
<td>Jaymelee Kim, PhD</td>
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<td>J.C.U. Downs, MD</td>
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**GENERAL INFORMATION**

**Registration Desk Hours**

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**Exhibit Hall Hours**

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All times are in the U.S. Mountain Time Zone

**Media Statement:** The American Academy of Forensic Sciences (AAFS) does not comment on forensic cases or medicolegal investigations. Media releases will be issued by the AAFS Board of Directors only in response to matters deemed pertinent to the business of the Academy. The sitting AAFS President is the only member of the Academy authorized to provide comment on behalf of the Academy. Comments, views, and opinions expressed by all other members of the Academy reflect the comments, views, and opinions of the individual solely.

**Registrant Minimum Age:** Registrants and presenters at the AAFS Annual Conference must be at least 18 years old at the time of the conference.

**Lost Badge Policy:** Lost, misplaced, stolen, or forgotten badges will incur a replacement fee equal to the original purchase amount of your registration. If your badge was complimentary, the fee will be the current, on-site rate.

**Author Information:** The *Journal of Forensic Sciences* encourages authors to submit previously unpublished reports and papers presented at the AAFS annual conference. For full instructions on manuscript preparation, consult the Information for Authors available at: https://www.aafs.org/resources/journal-of-forensic-sciences/information-for-authors/.

Manuscripts must be submitted electronically via the *Journal of Forensic Sciences* Manuscript Central site: http://mc.manuscriptcentral.com/jofs. For questions, please contact: jfs.editor@att.net.

**Reminders:**
- Video and/or audio recording of any session(s) or parts thereof is not permitted without prior approval from the American Academy of Forensic Sciences.
- English is the official language of the AAFS and its meetings; neither oral nor written translations will be provided.
- Although precautions are taken to prevent schedule changes, speakers and program schedules may change due to unforeseen circumstances.
- As a courtesy to others, please silence your cell phone when attending the sessions.
- Any type of misbehavior or heckling during a presentation will not be tolerated. Attendee will be escorted from the session.

**Future AAFS Annual Conferences**

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<th>Conference Name</th>
<th>Dates</th>
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<td>February 17-22, 2025</td>
<td>Baltimore Convention Center</td>
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<td>2026 AAFS Annual Conference</td>
<td>February 9-14, 2026</td>
<td>Ernest N. Morial Convention Center</td>
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<td>2026 AAFS Annual Conference</td>
<td>February 15-20, 2027</td>
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AAFS takes the safety of its meeting attendees seriously and strives to promote a welcoming experience for all. In order to promote a safe environment for meeting attendees, we have resources for meeting attendees about sexual misconduct.

What is sexual misconduct?
Sexual misconduct is an umbrella term that includes different types of sexual violence, including sexual harassment and sexual assault. (https://www.rainn.org/types-sexual-violence)

What is sexual harassment?
Sexual harassment includes unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature in the workplace or learning environment, according to the Equal Employment Opportunity Commission. (https://www.rainn.org/articles/sexual-harassment?gclid=CjwKCAjw2P-KBhByEiwADBYWCqz0g1E4mRJrXfSTN-EQ-JYXo2Q7USO-Yrtu1c9klaUmTmrEtpmsaxoCbiQQAvD_BwE)

What is sexual assault?
The term sexual assault refers to sexual contact or behavior that occurs without explicit consent of the victim. (https://www.rainn.org/articles/sexual-assault)

What do I do if I experience sexual misconduct during the annual conference?
• Call 911.
• Call the AAFS “safe person” number below or contact another member of the AAFS staff.
• Locate security personnel at the conference venue.
• Report conduct to the AAFS Ethics Committee.
• Refer to the resources list below.

What do I do if I have witnessed sexual misconduct during the annual conference?
• Talk to the victim/survivor. Encourage them to review this resource page.
• Direct them to the AAFS ‘safe person’ or another member of the AAFS staff
• Direct them to security personnel at the conference venue.
• If the person is in immediate danger, call 911.

Resources:
AAFS “safe person”: 917-678-7197
Denver Victims of Sexual Assault Unit
720-913-6035
Denver Center for Crime Victims Unit
303-894-8000
Denver Police Department
720-913-2000
https://denver.prelive.opencities.com/Government/Agencies-Departments-Offices/Agencies-Departments-Offices-Directory/Police-Department
National Sexual Assault Hotline: 1-800-656-4673
National Domestic Violence Hotline: 1-800-799-7233

No member or Affiliate of the Academy shall participate in unacceptable behavior at an annual Academy conference, to include times not specifically in session or at gatherings, social or otherwise, not specifically a part of the Academy program. Unacceptable behavior includes, but may not be limited to, harassment; intimidation; discrimination; physical abuse; physical assault, verbal abuse; inappropriate use of nudity or sexual images; threats; stalking; unwanted sexual comments or advances; or derogatory comments related to gender, gender identity and expression, sexual orientation, disability, physical appearance, body size, race, religion, national origin, or political positions.
CONFERENCE EXTRAS

The 2024 conference offers not only top-tier educational content, but a number of ways for you to enjoy Denver, connect with fellow attendees, and maximize your experience throughout the week. Check out some of the below opportunities offered to attendees of the AAFS Annual Conference:

**SUNDAY – FEBRUARY 18**

**Reception | 2:30 PM**

**Puck Drop | 4:00 PM**

**AAFS Hockey Night**

Arriving early in Denver? Kick off the conference with the Stanley Cup-winning Colorado Avalanche as they take on the Arizona Coyotes! AAFS attendees will have special seats for the game, along with pre-game food, drinks, and networking.

Note: This event is ticketed and is not included in your registration. You may purchase additional tickets for any guests you may wish to invite, even if they are not registered for the main conference itself. Tickets must be purchased by January 31. Transportation to the arena is not included.

Cost: $150 per ticket

**MONDAY – FEBRUARY 19 | 2:00 PM**

**TUESDAY – FEBRUARY 20 | 2:00 PM**

**Facility Tour: Denver City/County Office of the Medical Examiner**

Take a peek inside the world-class facility home to the Denver Medical Examiner/Coroner teams. Specially designed to support the City and County of Denver, the office investigates over 2,000 deaths annually. Their team is opening their doors to allow AAFS attendees a special look at how they operate to support the region. Limited space will be available, and tours will be approximately 1-1.5 hours. Transportation to/from the facility will be provided.

Special thanks to Denver Chief Medical Examiner James Caruso for partnering with us to offer this opportunity.

Cost: Free

**FRIDAY – FEBRUARY 23 | 7:00 PM**

**Closing Celebration: “Party on the Peak”**

We’re wrapping up the week with a special celebration, themed around the mountains and skiing of Colorado. Taking place Friday evening, your ticket includes music, food, entertainment, and more. Wear your best “chalet chic” or “flannel fun” and close out the conference with your friends and colleagues!

Note: This event is ticketed and is not included in your registration. You may purchase additional tickets for any guests you may wish to invite, even if they are not registered for the main conference itself. All guests must be 18 years or older.

Cost: $50 per ticket
AWARDS

R.B.H. Gradwohl Medallion
John D. McDowell, DDS, MS

Dr. McDowell is a Professor Emeritus from the University of Colorado School of Dental Medicine and is a retired professor from the University of Colorado School of Medicine. Dr. McDowell is board certified by the American Board of Forensic Odontology. He is presently associate medical examiner for the city and county of Denver, CO. He is a past president of the American Academy of Forensic Sciences (AAFS) and a Distinguished Fellow of the AAFS. Dr. McDowell is past chair of the Forensic Sciences Foundation, the AAFS Executive Committee, and many other positions within the AAFS. He has also served as President of the American Society of Forensic Odontology. He has been published extensively in the fields of diagnostic sciences, forensic odontology, pathology, domestic violence, and HIV and has contributed to radiology, dermatology, and otolaryngology textbooks.

Dr. McDowell has a long and distinguished career in academia and shared governance at the University of Colorado. He has served three terms as Chair of the Faculty Council of the University of Colorado System’s four campuses, two terms as President of the Faculty at the Health Sciences Center, and three terms as President of the Faculty Senate at the University’s School of Dental Medicine. He has received multiple teaching awards and has received the Professor of the Year Award. Because of his contributions to shared governance at the University, he was selected to be a one-year Administrative Fellow for the University of Colorado’s Board of Regents.

Dr. McDowell operates a forensic odontology consulting firm, McDowell Professional Consulting, based in Castle Rock, CO. He has been an expert witness in many standard of care issues across the United States. He has worked with many local, state, regional, and federal agencies, including coroners’ and medical examiners’ offices. Although Dr. McDowell is retired from full-time teaching, he is still presently very active in providing continuing education courses.

Dr. McDowell is a retired colonel in the United States Army Reserves where he served in multiple command positions, including several years as a Command Dental Surgeon and as a United States Army Hospital Commander. He has received multiple awards from the Department of Defense, including the prestigious Legion of Merit Award. Dr. McDowell also has served as a consultant to the United States Senate’s Subcommittee on Missing and Killed in Action.

Diversity, Equity, & Inclusion Award
Kate Spradley, PhD

FSF Humanitarian and Human Rights Resource Center’s Clyde Snow Award
Nermin Sarajlić, MD, PhD

FSF Emerging Forensic Scientist Award
Elaine Y. Chu, PhD
Ya-Chih Cheng, MS
Sara E. Walton, MS

FSF Warren-Young Scholarship
Mark A. Peacock, MNS

FSF Henry C. Lee Scholarship
Calil Makhoul, MSc

FSF Jan S. Bashinski Criminalistics Graduate Thesis Assistance Grant
Natali Hassett

Young Forensic Scientists Forum Founder’s Award
Zain M. Bhaloo, MSc
SECTION AWARDS

The Section Awards will be presented during Section Business Meetings on Wednesday, February 21.

Section Award Honorees

Anthropology Section’s
J. Lawrence Angel Award
T. Dale Stewart Award
Ellis R. Kerley Research Award
Outstanding Mentorship Award
Diversity & Inclusion Award

Amy M. Plemons, PhD
Eugênia Cunha, PhD
Mary Elizabeth Cole, PhD
Nicholas P. Hermann, PhD
TBD

Criminalistics Section’s
Paul L. Kirk Award
Mary E. Cowan Outstanding Service Award

John J. Lentini, BA
Jennifer S. Mihalovich, MPH

Digital & Multimedia Sciences Section’s
Outstanding Case Study Award
Carrie Morgan Whitcomb Outstanding Service Award
Outstanding Student Research Award

Nicole R. Odom, MSFS
Marla Englander Carroll, BS
Shinelle Hutchison, MSc

Engineering & Applied Sciences Section’s
Founders Award
Andrew H. Payne, Jr. Special Achievement Award
Steven Charles Batterman Award

TBD
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TBD

Forensic Nursing Science Section’s
Forensic Nurse Scientist Award
Forensic Nurse Innovator Award

Katherine N. Scafide, PhD
Joyce P. Williams, DNP

General Section’s
Robert Gaffney Achievement Award
Paul W. Kehres Meritorious Service Award

Anita Hasert, BS
Brian S. Clark, MFS

Jurisprudence Section’s
Harold A. Feder Award

TBD

Odontology Section’s
Reidar F. Sognnaes Award

Gary M. Berman, DDS

Pathology/Biology Section’s
Milton Helpern Award
Best Resident Paper Award
Award for Achievement in the Forensic Life Sciences

James R. Gill, MD
Finn M. Auld, BMBS
Sherah L. VanLaerhoven, PhD

Questioned Documents Section’s
Maureen Casey-Owens Award

Andrea Ledić, Msc

Toxicology Section’s
Rolla N. Harger Award
June K. Jones Scholarship Award
Best Poster Award

Joseph J. Saady, PhD
Munchelou M. Gomonit, BS
Rebecca Smith, MS
BUSINESS MEETINGS

Attend Your Section’s Annual Business Meeting!

<table>
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<td>Jurisprudence</td>
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<td>Psychiatry &amp; Behavioral Science</td>
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<td>2:00 PM</td>
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<td>Questioned Documents</td>
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<tr>
<td>2:00 PM</td>
<td>- 3:45 PM</td>
<td>Toxicology</td>
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</tbody>
</table>

All times are in the U.S. Mountain Time Zone

Attend the AAFS Annual Business Meeting for a Chance to Win a Complimentary Meeting Registration!

The Annual Business Meeting of the Fellows and Members of the AAFS will be held on Wednesday, February 21, at 4:15 PM. It is essential that all Fellows and Members attend this very important meeting in order to reach a quorum for the voting process. Agenda items include the election of 2024-25 Officers, consideration of bylaw amendments, a summary of AAFS activities during the past year, and plans for the future.

As an incentive to attend, all Fellows and Members present will automatically be entered in a drawing for a complimentary meeting registration to attend the 2025 AAFS Annual Scientific Conference in Baltimore, MD.
The American Academy of Forensic Sciences would like to thank the following for their contribution to the 76th Annual Scientific Conference:

GOLD SPONSOR

SILVER SPONSORS

BRONZE SPONSORS

GENERAL SPONSORS
CONTINUING EDUCATION

General Information

All meeting sessions are lectures with one or more speakers. Continuing professional education credits will be offered for physicians, dentists, and attorneys. Continuing education credit applications will be submitted for physicians, nurses, and dentists. Attorneys may request CLE credit; please see the “Legal” section.

To register for continuing education credit, please complete the appropriate section on the meeting Registration Form. An individual must be a registrant to obtain continuing education credit. Fees charged for continuing education credits are based on projected costs of providing the various types of continuing education credit. The AAFS has adopted a user-pay approach so that those individuals who benefit from the specific continuing education program are responsible for the costs incurred.

In order to be in compliance with accrediting organizations, introductions and breaks have been deducted from the total hours. Please note that continuing education credit is not available for all sessions. All continuing education credit recipients will receive certificates with the number of continuing education hours awarded. Attendance reports are filed with the appropriate state or national agency, as required.

Learning Objectives of the AAFS Continuing Education Program

• Recognize the perspectives and roles of the various forensic science disciplines
• Assess current concepts and practices
• Discuss relevant forensic science issues related to science, evidence and the law
• Identify strategies for researching descriptive studies, technology and methods, diagnostics, interpretation and testimony
• Review administrative functions performed by forensic scientists

American Board of Criminalists Approval

The American Academy of Forensic Sciences (AAFS) is approved by the American Board of Criminalistics (ABC) to offer continuing education points for approved workshops for criminalists and forensic scientists. The ABC maintains responsibility for the program, and credit may be awarded to ABC Fellows, Diplomates, and Affiliates.

Overall Purpose and Objective Statements for Major Aspects of AAFS Programs

Workshops and Special Sessions

Purpose: To provide an opportunity for experts to present material and to lead discussion and practical exercises related to forensic science methods, procedures, diagnosis, investigation, professional relations and practices, communication, administration, and professional development.

Learning Overview: Detailed individually in each workshop and special session announcement and description.

Plenary and Keynote Sessions

Purpose: To provide a multidisciplinary presentation and discussion of issues related to the forensic science profession.

Learning Overview: Attendees will be able to: a) identify the challenges the forensic science profession has faced and will continue to face in terms of ensuring quality; b) identify ways to deal with the variances each challenge presents; and c) identify the entities which have influence over setting the quality standards in the field of forensic science.

Oral and Poster Section Scientific Sessions

Purpose: To provide an opportunity for presentation and discussion of case reports, descriptive studies, review presentations, research, administrative issues, and investigative/diagnostic methods regarding topics and issues of importance to a primary discipline among the forensic sciences.

Learning Overview: To meet the educational objectives stated by each presenter for his/her/their presentation.

Last Word Society

Purpose: To provide a retrospective forensic analysis of historical events and to provide education about the history and evolution of forensic sciences as well as the modern methods and technologies used to re-examine past events of forensic science interest. Emphasis is placed on the evaluation of the original opinions and case outcome and on the development of newer hypotheses based on the re-analysis.

Learning Overview: To meet the educational objectives stated by each presenter for his/her/their presentation.
CONTINUING EDUCATION

Guidelines For Claiming Credit

As the sponsor of Continuing Education Credit, the AAFS recognizes that the forensic science disciplines are inextricably linked and that interdisciplinary knowledge is critical to promote competence in forensic practice. As a result, the claiming of credit for various continuing education activities related to medicine, dentistry, law, and other forensic disciplines need not be limited to one’s primary professional specialty. For example, a forensic pathologist from the Pathology/Biology Section may gain very useful and relevant information by attending a presentation in the Anthropology Section scientific session. It is appropriate to claim continuing medical education credit for that session. Many other examples exist where the claiming of continuing education credit is appropriate for attending sessions that cover material related to, but which lay outside of, one’s primary professional area of expertise.

It is the conference attendee’s responsibility to document which program sessions were attended and to determine those sessions for which continuing education credit may be claimed. The AAFS operates under the assumption that meeting attendees will, in general, be unlikely to attend sessions that will not be beneficial to their professional practice and that the claim for continuing education credit is justified if a session contains scientific or practice-related information that may bring new knowledge, may affirm current knowledge, or may provide information that could possibly modify one’s professional practices.

Those who wish to receive continuing education credit must register and pay the Continuing Education Credit fee on the meeting Registration Form. CE Credit Request Forms will be available on the AAFS website. The completed forms must be returned to AAFS by the designated deadline.

Joint Accreditation Statement

In support of improving patient care, this activity has been planned and implemented by the Postgraduate Institute for Medicine and the American Academy of Forensic Science. Postgraduate Institute for Medicine is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Physician Continuing Medical Education Credit

The Postgraduate Institute for Medicine designates this live activity for a maximum of 44.75 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Dental Continuing Education Credit

This continuing education activity has been planned and implemented in accordance with the standards of the ADA Continuing Education Recognition Program (ADA CERP) through joint efforts between Postgraduate Institute for Medicine and the American Academy of Forensic Sciences.

Postgraduate Institute for Medicine is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of the credit hours by boards of dentistry. The Postgraduate Institute for Medicine designates this activity for 44.75 continuing education credits. Concerns or complaints about a CE Provider may be directed to the provider or to the Commission for Continuing Education Provider Recognition at www.ada.org/cerp.

Legal Continuing Education Credit

Continuing legal education credit will be awarded on an hour-for-hour basis. Attorneys may file the AAFS-issued CLE certificate with their respective state bars.

Non Physician Continuing Education Credit

A general non physician certificate of attendance will be available.

General Continuing Education Credit

General continuing education credit is offered for those practicing the various forensic science disciplines not represented in the aforementioned list.
DIVERSITY AND INCLUSION IN FORENSIC SCIENCE FORUM AND RECEPTION

Open to All Meeting Registrants

Tuesday, February 20, 2024

8:00 PM - 10:00 PM

Moderated by the AAFS Diversity Outreach Committee

The goal of the Diversity Outreach Committee (DOC) Session is to enlighten and initiate dialogue regarding diversity, equity, and inclusion initiatives within the AAFS and the greater forensic science community. Participants will hear from an invited speaker on their perspectives and experiences on issues related to diversity and inclusion. The DOC hopes that this interactive session will promote dialogue on navigating diversity, equity, and inclusion within forensic science throughout an everchanging social climate.

Check back for speaker information.

Reception sponsored by:

JusticeTrax

MENTORSHIP PROGRAM BREAKFAST

Pre-Registration Encouraged

Wednesday, February 21, 2024

7:30 AM – 8:30 AM

The 2024 Mentorship Program Breakfast is for those who expressed an interest when registering for the conference. This breakfast will bring together those mentees and mentors who are willing to help guide personal growth within the individual AAFS sections.

For those unable to make it to Denver, or have a conflict that morning but are interested in the Mentorship Program, please let us know by contacting mentorship@aafs.org.

All times are in the U.S. Mountain Time Zone
The purpose of the Student Academy of Forensic Sciences is to bring to the attention of high school students the vital importance of the application of scientific principles to the administration of justice. It acquaints the participants with the role of the forensic science disciplines in the legal system as well as the education and training required for the career in each discipline.

Chair:
Lynn A. Schneeweis, MS
Massachusetts State Police Crime Laboratory
Maynard, MA

Co-Chair:
Ginesse A. Listi, PhD
Louisiana State University
Baton Rouge, LA

Faculty:
Anthropology
Lauren R. Pharr Parks, PhD
Memphis, TN

Criminalistics:
Kelly Knight, MS
George Mason University
Fairfax, VA

Odontology:
Lillian A. Nawrocki, DDS
Orlando, FL

Pathology/Biology:
J.C.U. Downs, MD
forensiX, LLC
Savannah, GA

Psychiatry & Behavioral Science:
Emily D. Gottfried, PhD
Medical University of South Carolina
Charleston, SC

Questioned Documents:
Cami Fuglsby, BS
South Dakota State University
Brookings, SD

Toxicology:
George F. Jackson, PhD
NJ Office of the Chief State Medical Examiner
Burlington Township, NJ

Ashraf Mozayani, PhD
Texas Southern University
Houston, TX

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Brookings, SD

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NJ Office of the Chief State Medical Examiner
Burlington Township, NJ

Ashraf Mozayani, PhD
Texas Southern University
Houston, TX
STUDENT ACADEMY

Program:

9:00 AM - 9:10 AM  Introduction
Lynn A. Schneeweis, MS

9:10 AM - 9:20 AM  Welcome
C. Ken Williams, MS, JD

9:20 AM - 9:30 AM  “The Case”
Ginesse A. Listi, PhD

The Forensic Sciences Group I Disciplines

9:30 AM - 10:45 AM  Pathology/Biology
J.C.U. Downs, MD

Anthropology
Lauren R. Pharr Parks, PhD

Odontology
Lillian A. Nawrocki, DDS

Toxicology
George Jackson, PhD; Ashraf Mozayani, PhD

Digital & Multimedia Sciences
Douglas Lacey, BS, MS

Forensic Nursing Science
Amy Y. Carney, PhD

10:45 AM - 11:00 AM  Q&A, Assignment, and Break

The Forensic Sciences Group II Disciplines

11:00 AM - 12:15 PM  General
Natalie M. Borgan, MS

Criminalistics
Kelly Knight, MS

Questioned Documents
Cami Fuglsby, BS

Engineering & Applied Sciences
Roy Crawford, BSME

Psychiatry & Behavioral Science
Emily D. Gottfried, PhD

12:15 PM - 1:30 PM  Lunch and Student Trivia

1:30 PM - 1:45 PM  Case Conclusion
M.J. Menendez, JD

1:45 PM - 2:00 PM  Wrap-Up

All times are in the U.S. Mountain Time Zone
# Accreditation of Forensic Science Academic Programs

**Tuesday, February 20, 2024**

**Pre-Registration Not Required—Open to All Meeting Attendees**

8:30 AM – 12:45 PM

## Learning Overview:
Upon completion of this session, the participant should be able to understand the process of accreditation through the AAFS FEPAC mechanism and be able to participate in the process as a reviewer of academic programs. Participants from academic programs will also learn about the process of accreditation from different perspectives.

## Program Description:
This session has been developed to assist academic institutions offering undergraduate and graduate degree programs in forensic science and forensic digital evidence to prepare for the accreditation process through the FEPAC. This session will also assist future on-site evaluators (academic and practitioners) to prepare for on-site evaluations of academic programs. Successful completion of this one-day session will qualify participants for consideration to serve as on-site evaluators for FEPAC in the future (please note that participants must still meet other FEPAC requirements, such as membership in the AAFS and designation as either a practitioner or academician). This training session will highlight updates to the FEPAC Standards for Accreditation and provide valuable information for both program directors and on-site evaluators.

The FEPAC is a standing committee of the AAFS with a membership that includes five educators, five forensic science practitioners, and a public member as voting members. The mission of the FEPAC is to maintain and enhance the quality of forensic science education through a formal evaluation and recognition of college-level academic programs. The primary function of the committee is to develop and maintain standards and to administer an accreditation program that recognizes and distinguishes high-quality undergraduate and graduate forensic science programs. Forty academic programs have successfully completed the accreditation process since 2003. Additional information on FEPAC can be found on the FEPAC website: https://www.aafs.org/FEPAC.

## Program:

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM - 9:00 AM</td>
<td>Introduction and Welcoming Remarks/Module 1: What to Know About FEPAC</td>
<td>Heidi Eldridge, PhD</td>
</tr>
<tr>
<td>9:00 AM - 9:30 AM</td>
<td>Module 2: An Overview of the FEPAC Application Process</td>
<td>Thomas Brettell, PhD</td>
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<tr>
<td>9:30 AM - 10:00 AM</td>
<td>Module 3: A Review of Self-Study Standards 3.0—General for All Programs</td>
<td>Sarah Seashols Williams, PhD</td>
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<tr>
<td>10:00 AM - 10:15 AM</td>
<td>Break</td>
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<tr>
<td>10:15 AM - 10:45 AM</td>
<td>Module 4: A Review of Self-Study Standards 4.0—Undergraduate Programs</td>
<td>Josh Brunty, ScD</td>
</tr>
<tr>
<td>10:45 AM - 11:15 AM</td>
<td>Module 5: A Review of Self-Study Standards 5.0—Graduate Programs</td>
<td>A. Karl Larsen, PhD</td>
</tr>
<tr>
<td>11:15 AM - 11:45 AM</td>
<td>Module 6: Accreditation Decisions and Categories, Appeals Process, Annual Reports, Substantive Changes, and Post-Visit Survey</td>
<td>Heidi Eldridge, PhD</td>
</tr>
<tr>
<td>11:45 AM - 12:15 PM</td>
<td>Module 7: FEPAC On-Site Evaluator Training</td>
<td>Jason L. Schroeder, MS</td>
</tr>
<tr>
<td>12:15 PM - 12:45 PM</td>
<td>Questions and Answers</td>
<td>FEPAC Commissioners and Accreditation Coordinator</td>
</tr>
</tbody>
</table>

All times are in the U.S. Mountain Time Zone
Oh, the Places You’ll Go! Exploring the Paths to Justice for All

**Program Description:** This full-day session will present the opportunity for attendees to learn about the many career paths one can take in the forensic science community and how each play a unique role in promoting justice for all and advancing the field.

**Educational Objectives:** The Young Forensic Scientists Forum (YFSF) offers students and young professionals the opportunity to interact with professionals in the forensic science community as they begin their careers. This session presents attendees with the chance to learn about the multitude of careers available in forensic science, as well as develop professional skills that are essential.
YOUNG FORENSIC SCIENTISTS FORUM

S1 Oh, the Places You’ll Go! Exploring the Paths to Justice for All

Program Description cont.:

for the job-hunting process. Our mission is to provide the education, mentorship, and resources necessary to champion students and young forensic scientists to promote interest, membership, and participation with AAFS and the forensic science community for years to come.

Impact on the Forensic Science Community: After attending this session, attendees will have a better understanding of the diversity of roles and career paths in the forensic science community and how each play an integral part in furthering the field on a national and international level. Additionally, attendees will have the opportunity to sharpen their professional skills in resume writing and making impactful introductions.

Program:

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:00 AM</td>
<td>Introduction to the YFSF</td>
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<td></td>
<td><em>Emily Rue, PhD</em></td>
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<tr>
<td>8:20 AM</td>
<td>Membership in AAFS</td>
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<td></td>
<td><em>Cheryl Hunter</em></td>
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<tr>
<td>8:40 AM</td>
<td>My Journey to Justice for All</td>
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<td><em>C. Ken Williams, MS, JD</em></td>
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<tr>
<td>9:00 AM</td>
<td>Careers in Forensic Psychiatry</td>
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<td></td>
<td><em>Christopher Thompson, MD</em></td>
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<tr>
<td>9:20 AM</td>
<td>Investigating Forensics: Making a Case for Forensic Entomology as a Career</td>
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<td><em>Krystal R. Hans, PhD</em></td>
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<td>9:40 AM</td>
<td>Forensic Pathology: In the Flesh</td>
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<td><em>Deirdre Amaro, MD</em></td>
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<tr>
<td>10:00 AM</td>
<td>BREAK</td>
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<tr>
<td>10:15 AM</td>
<td>Careers in Forensic Science Are Not All Created Equal—What Are the Options for a Young Scientist?</td>
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<td><em>Alex J. Krotulski, PhD</em></td>
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<tr>
<td>10:35 AM</td>
<td>Career Path of a Forensic Scientist: A Realistic Approach</td>
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<td><em>Joe Adserias Garriga, DDS, PhD</em></td>
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<tr>
<td>10:55 AM</td>
<td>Is Artificial Intelligence (AI) the Answer to Getting Hired Faster (and Better)?</td>
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<td><em>Dirk M. Vastrick, BA</em></td>
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<tr>
<td>11:15 AM</td>
<td>Resume Review Workshop</td>
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<td><em>Dirk M. Vastrick, BA</em></td>
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<td>11:55 AM</td>
<td>BREAK</td>
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<tr>
<td>1:00 PM</td>
<td>From Fungi to Crime Scenes: A Lot of Places to Go and Learn!</td>
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<td><em>M. Gabriela Roca, PhD</em></td>
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<td>1:20 PM</td>
<td>Life of a Forensic Scientist</td>
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<td><em>Beth S. Goodspeed, MS</em></td>
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<td>1:40 PM</td>
<td>The Unbeaten Path: Making Unconventional Career Choices</td>
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<td><em>Anna S. Duggar, PhD</em></td>
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All times are in the U.S. Mountain Time Zone
## S1  Oh, the Places You’ll Go! Exploring the Paths to Justice for All

Program cont.:

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>2:00 PM - 2:20 PM</td>
<td>Application of Forensic Sciences in International Settings</td>
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<tr>
<td></td>
<td>Davette Gadison, MA</td>
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<tr>
<td>2:20 PM - 2:40 PM</td>
<td>The Heart and Justice</td>
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<td></td>
<td>Katarzyna Michaud, MD</td>
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<tr>
<td>2:40 PM - 2:55 PM</td>
<td>BREAK</td>
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<tr>
<td>2:55 PM - 3:15 PM</td>
<td>The Role of a Field Application Scientist</td>
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<td></td>
<td>Jeremy Boone, MS</td>
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<tr>
<td>3:15 PM - 3:35 PM</td>
<td>A Scientist at the Crime Scene?</td>
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<td></td>
<td>Marilyn Miller, EdD</td>
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<tr>
<td>3:35 PM - 3:55 PM</td>
<td>Visit Other Silos, Cross-Over Boundaries, and Break-Through Ceilings</td>
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<td></td>
<td>Michelle R. Peace, PhD</td>
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<td>3:55 PM - 4:55 PM</td>
<td>Flash Mentoring/Mixer Session</td>
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<td></td>
<td>Michelle R. Peace, PhD</td>
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<tr>
<td>4:55 PM - 5:00 PM</td>
<td>Closing of the YFSF Special Session</td>
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<tr>
<td></td>
<td>Dayla Rich, PhD</td>
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</tbody>
</table>

All times are in the U.S. Mountain Time Zone
INTERDISCIPLINARY SYMPOSIUM

Open to All Meeting Registrants—Pre-Registration Encouraged

S2 With Liberty and Justice for All: The Role of Forensic Science in Truth and Fairness

Tuesday, February 20, 2024 1:00 PM – 5:00 PM CE Hours: 3.5

Chair: Jessica Volz, DNP
Clinical Director of Forensics
Adventist HealthCare
Shady Grove Medical Center, Rockville, MD

Co-Chair: Adam Freeman, DDS
Forensic Odontologist
Westport, CT
Brunswick, MD

Presenters:
Patrick Buzzini, PhD
Professor
Sam Houston State University
Huntsville, TX

Michelle D. Miranda, PhD
Associate Professor & Acting Director
The Center for Criminal Justice Studies
Farmingdale State College [SUNY]
Farmingdale, NY

Sarah P. Chu, PhD
Director of Policy and Reform
Perlmutter Center for Legal Justice
New York, NY

Antonel Olckers, PhD
President, African Forensic Sciences Academy (AFSA)
CEO, DNAbiotec (Pty) Ltd,
Pretoria, Gauteng, SOUTH AFRICA

Bernice B. Donald, JD
Judge (Retired)
Resolute Systems LLC
Eads, TN

Iain Pretty, BDS, PhD
Forensic Consultant
Manchester Science Park
Manchester, England, UNITED KINGDOM

Keith Inman, MCrIm
Associate Professor
Cal State East Bay
Hayward, CA

Claude Roux, PhD
Director, UTS Centre for Forensic Science
President, International Association of Forensic Sciences
University of Technology Sydney
Ultimo, New South Wales, AUSTRALIA

Program Description: This half-day Interdisciplinary Symposium will discuss the influence of forensic science on the concept of Justice for All. Presentations on forensic science’s foundational principles, ethics, and evolving definitions will be explored through an in-depth discussion of the Sydney Declaration. The importance of scientific rigor and the role of truthful and transparent application of forensic science knowledge in ensuring the preservation of fair and just judicial and humanitarian outcomes will be highlighted by presenters discussing the innocence work and wrongful convictions. The last half of the symposium will be focused on understanding similarities and differences in the past and current real-world application and role of forensic sciences to the justice system in the United States, the United Kingdom, and South Africa/Africa. The aspiration of working toward a world where there is Justice for All is in the hearts of many forensic scientists. This presentation will discuss the application of forensic science to the basic human right of access to justice and open discussion about the future of the intersection of societal needs, science, and law.

Educational Objectives: Upon completion of this workshop, attendees will: (1) articulate the basic principles outlined in the Sydney Declaration and describe its significance; (2) discuss reasons why scientific rigor and truthful, transparent application of science in forensic disciplines is critical to ensuring justice; and (3) explain some of the similarities and differences in the application of forensic sciences to justice in the United States, United Kingdom, Australia, and South Africa/Africa.

All times are in the U.S. Mountain Time Zone
## INTERDISCIPLINARY SYMPOSIUM

### S2  With Liberty and Justice for All: The Role of Forensic Science in Truth and Fairness

**Program:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1:00 PM – 1:45 PM</td>
<td>The Sydney Declaration: The Essence of Forensic Science</td>
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<tr>
<td>1:45 PM – 2:15 PM</td>
<td>Open Discussion of the Sydney Declaration</td>
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<tr>
<td>2:15 PM – 2:30 PM</td>
<td>BREAK</td>
</tr>
<tr>
<td>2:30 PM – 3:15 PM</td>
<td>Innocence Work: The Role of Scientific Rigor, Transparency, and Integrity in Justice</td>
</tr>
<tr>
<td>3:15 PM – 4:00 PM</td>
<td>Questions and Answers About Innocence Work</td>
</tr>
<tr>
<td>4:00 PM – 4:15 PM</td>
<td>BREAK</td>
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<tr>
<td>4:15 PM – 5:00 PM</td>
<td>Panel Discussion: The Role, Ethical Considerations, and Application of the Forensic Sciences in the Justice System: The United States, the United Kingdom, Australia, and South Africa/Africa</td>
</tr>
</tbody>
</table>

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KEYNOTE ADDRESS

Open to All Meeting Registrants

Wednesday, February 21, 2024

8:30 AM – 9:30 AM

Bryan Stevenson

Montgomery, AL

Bryan Stevenson is the founder and Executive Director of the Equal Justice Initiative (EJI), a human rights organization in Montgomery, AL. Under his leadership, EJI has won major legal challenges eliminating excessive and unfair sentencing, exonerating innocent death row prisoners, confronting abuse of the incarcerated and the mentally ill, and aiding children prosecuted as adults. He is a graduate of the Harvard Law School and the Harvard School of Government.

Mr. Stevenson has argued and won multiple cases at the United States Supreme Court, including a 2019 ruling protecting condemned prisoners who suffer from dementia and a landmark 2012 ruling that banned mandatory life-imprisonment-without-parole sentences for all children 17 or younger. Mr. Stevenson and his staff have won reversals, relief, or release from prison for over 135 wrongly condemned prisoners on death row and won relief for hundreds of others wrongly convicted or unfairly sentenced.

Mr. Stevenson has initiated major new anti-poverty and anti-discrimination efforts that challenge inequality in America. He led the creation of two highly acclaimed cultural sites that opened in 2018: the Legacy Museum and the National Memorial for Peace and Justice. These new national landmark institutions chronicle the legacy of slavery, lynching, and racial segregation, and the connection to mass incarceration and contemporary issues of racial bias.

Mr. Stevenson’s work has won him numerous awards and he has received over 40 honorary doctoral degrees, including degrees from Harvard, Yale, Princeton, the University of Pennsylvania, and Oxford University. He is the author of the critically acclaimed New York Times bestseller, Just Mercy, which was named by Time Magazine as one of the 10 Best Books of Nonfiction for 2014 and has been awarded several honors, including the American Library Association’s Carnegie Medal for best nonfiction book of 2015 and a 2015 NAACP Image Award. Just Mercy was recently adapted as a major motion picture. AAFS will present a free screening of the film on Sunday, February 18, at 7:00 PM.

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Overview: Science, as a general discipline, is the practice of using systematic, rigorous observation, experimentation, and testing of theory-based hypotheses in environments over which the scientist has some control or can control for in their analyses. Though “science” is often used to describe a vocation, it is actually a philosophy. Science is a way of thinking, answering questions, and building an understanding of the world and the things and people in it. Forensic science, as a subdiscipline of general science, is broadly defined as the application of science to matters of the law. The tasks undertaken by forensic scientists incorporate many features seen in other types of science (i.e., practitioners must obtain and analyze evidence, interpret results, and provide critical information to support or refute hypotheses); however, there are some notable differences.

As opposed to most conventional scientific endeavors, in which debates over hypotheses and conclusions occur between scientists themselves and primarily in the academic realm, the practices of forensic science operate in a unique arena in which results are routinely presented to non-scientists (e.g., law enforcement professionals and triers of fact), with some cases finding their way into courts of law. This requires forensic scientists to navigate the differing interests, values, and/or needs of law enforcement, the legal community, public safety, individual liberty, and public perception all within an adversarial legal system staffed by professionals with varying degrees of scientific literacy.

Complicating matters further, forensic work, although typically performed under the direction and auspices of law enforcement and prosecutorial agencies, may also be performed under the direction of defense counsel or other agencies, lending an inherent view that forensic practices are biased. Although there are an increasing number of so called “independent” forensic laboratories, experts, or organizations, many of these entities still operate within a government structure which, although less direct, may still be subject to certain subjective pressures providing the appearance of bias.

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The Intersection of Science and Justice: Does Forensic Science Have a Role in Ensuring Justice for All?

Overview cont.

Scientists and forensic experts should strive for impartiality and objectivity at all times. Ideally, they should be the most objective component in any legal system as they must adhere to the facts, and present only information and opinions supported by a thorough scientific analysis of evidential data and/or a methodical consideration of information empirically demonstrated in the literature. Beyond the traditional forensic setting, some would hold that the scientist’s role should remain the same, with an impartial view of the world and opinions limited to matters strictly in accordance with scientific or legal inquiry. Others, however, view the scientist’s role as one that should go beyond this setting, into the public domain, where their objective pursuits of the truth could lend expertise toward improving matters of social significance.

“Justice for All,” as a mantra, is a pervasive societal theme with a significant presence in both the forensic and legal realms, as any individual accused of committing a crime is entitled to due process in the same manner as any other individual, regardless of demographics. This theme: however, is more often associated with philosophical discussion within legal circles, rather than matters of scientific significance. The purpose of this session will be to examine the concept of “Justice for All” from the perspective of the forensic scientist, with the goal of elucidating what role, if any, the forensic scientist may play toward ensuring fairness within the larger legal context.

Some of the questions to be discussed during this session include: Does forensic science play a role in ensuring “justice for all”?; Do forensic scientists have an obligation in this matter and, if so, to what extent?; What measures are being taken to ensure forensic science produces equitable results?; And, what further work needs to be done to bring forensic sciences closer to these goals?

Program:

10:00 AM - 10:10 AM  Welcome and Opening Remarks
C. Ken Williams, JD, MS; Vincent J. Desiderio, Jr.; MS, Dean De Crisce, MD

10:10 AM - 10:40 AM  Individual Panelist Statements
Hon. Bernice Donald, JD; Tiffany Roy, JD; Sarah Chu, PhD; Adele Quigley-McBride, PhD; John Butler, PhD

10:40 AM - 11:00 AM  Panel Discussion Part I: Moderated Questions
Hon. Bernice Donald, JD; Tiffany Roy, JD; Sarah Chu, PhD; Adele Quigley-McBride, PhD; John Butler, PhD

11:00 AM - 11:25 AM  Panel Discussion Part II: Questions from the Audience
Hon. Bernice Donald, JD; Tiffany Roy, JD; Sarah Chu, PhD; Adele Quigley-McBride, PhD; John Butler, PhD

11:25 AM - 11:30 AM  Closing Remarks
C. Ken Williams, JD; MS, Vincent J. Desiderio, Jr.; MS, Dean De Crisce, MD

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JUSTICE TALKS CASE BREAK SESSIONS

CB1  The Boundaries of Judicial Discretion in Admitting Forensic Scientific and Technical Evidence

Tuesday, February 20, 2024  7:15 AM – 8:15 AM  CE Hour: 1.0

Stephanie Domitrovich, JD, PhD  Milton Nuzum III, JD
Senior Judge  Former Judge
Administrative Office of PA Courts  Vincent, OH
Erie, PA

Program Description: In this presentation, Judge Stephanie Domitrovich and former Judge Milt Nuzum will facilitate an interactive dialog with the session attendees as they examine a series of cases and scenarios that test the limits of a trial judge’s judicial discretion in admitting scientific and technical forensic evidence. Attendees will analyze a series of scenarios based on actual cases and place themselves in the role of a trial judge in making decisions on admissibility of the evidence in each scenario.

Educational Objectives: The goals of this presentation are: (1) to examine a series of cases and scenarios that test the limits of a trial judge’s judicial discretion in admitting scientific and technical forensic evidence; and (2) to help attendees understand the Rules of Evidence and relevant case law that establish the guidelines a trial judge must follow in making critical decisions on the admissibility of scientific and technical forensic evidence.

Impact on the Forensic Science Community: Attendees will analyze a series of scenarios based on actual cases and place themselves in the role of a trial judge in making decisions on the admissibility of the evidence in each scenario. This dynamic presentation will impact the forensic science community by enabling prosecutors, defense attorneys, judges, and expert witnesses to be prepared to successfully face the scrutiny of the court when seeking admissibility of scientific and technical forensic evidence in cases where the outcome likely hinges on the testimony of an expert witness.

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Xylazine—An Emerging Cause of Death in Correctional Institutions

Tuesday, February 20, 2024  8:30 AM – 9:30 AM  CE Hour: 1.0

Marie E. Lasater, MD
Coroner
Texas County Government
Licking, MO

Program Description: The unregulated veterinary drug xylazine is emerging as a cause of death in state correctional facilities. Unlike the drug fentanyl, there is no antidote. The origins and toxicity of the drug are discussed and illustrated with a case study of an offender death due to xylazine mixed with fentanyl.

Educational Objectives: The goals of this presentation are to: (1) identify physical symptoms of xylazine use, (2) identify treatment for xylazine overdose, and (3) obtain proper toxicology samples in case of fatal overdose.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by informing attendees that the importance of recognizing signs/symptoms of xylazine use cannot be overstated. As an emerging drug, xylazine is not always included in basic forensic panels, so expanded testing is recommended. Xylazine has no approved antidote for humans. It is NOT a federally controlled substance, so has the propensity to be easily obtained.
JUSTICE TALKS CASE BREAK SESSIONS

CB3 Vacuous Accreditation: The Illusion of Quality in Forensic Science

Wednesday, February 21, 2024  7:15 AM – 8:15 AM                  CE Hour: 1.0

Tiffany A. Roy, JD, MSFS
Forensic DNA Expert
ForensicAid, LLC
West Palm Beach, FL

Kimberly S. Kunkler, PhD
Assistant Professor
Marshall University
Huntington, WV

Program Description: This presentation will call attention to gaps in the quality oversight structure by questioning the current perceptions of forensic laboratory accreditation, highlighting its strengths and limitations, providing specific examples of where failures have occurred, and discussing potential opportunities for improvement.

Educational Objectives: This presentation is intended to highlight common misconceptions regarding accreditation and quality assurance in United States forensic laboratories. Accreditation is often misdescribed by practitioners and misunderstood by judges and juries. As a result of participation in this presentation, attendees will gain a clearer understanding of the role of forensic laboratory accreditation in the United States, including its strengths and limitations.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by fostering discussion about what meaningful and effective forensic science oversight would look like in the United States and why current accreditation frameworks are insufficient to ensure production of accurate and reliable forensic results. This presentation will draw the attention of justice partners to the need for statutory oversight of forensic science on the state and federal level in the image of the Texas Commission on Forensic Science.
CB4  2023 State Legislative Encroachments Against Forensic Pathology Professionalism and Independence: Harbingers of Future Threats and the Opportunity for Strategic Planning and Action

Thursday, February 22, 2024  7:15 AM – 8:15 AM  CE Hour: 1.0

M.J. Menendez, JD  Joyce L. deJong, DO
Senior Fellow/General Counsel  Professor and Chair
CFSRE  Department of Pathology
Willow Grove, PA  Western Michigan University

Program Description: In 2023, the independence of forensic pathology in the context of Medicolegal Death Investigations (MDI) was directly attacked by the introduction of various state legislative proposals and bills passed into law. These legislative proposals and laws erode the ability of forensic pathologists to maintain impartiality and objectivity, mandate particular findings on death certificates, and allow non-physicians to perform autopsies. The cause for alarm is heightened by the apparent lack of scientific and medical underpinnings in the bills and laws. This program will address threats to the independence and neutrality of MDI and the medical practice of forensic pathology.

Educational Objectives: After attending this presentation, attendees will understand the importance of monitoring and evaluating state legislative proposals through a prioritized, anticipatory process. Vigilance in monitoring is warranted due to the recent uptick in legislative proposals and passed bills that dictate processes and outcomes in MDIs. The information obtained by attendees will enable proactive and informed responses to proposed legislation that encroaches on the independence of forensic pathology and MDI.

Impact on the Forensic Science Community: This presentation impacts the forensic science community by exposing threats to the independence and neutrality of MDI and the medical practice of forensic pathology and by encouraging forward-leaning responses to ward off such threats.
CB5  Protecting the Innocent: The Urgent Need to Research When, and Under What Circumstances, DNA Evidence Can Lead to Wrongful Convictions

Friday, February 23, 2024  7:15 AM – 8:15 AM  CE Hour: 1.0

J.D. Schmid, JD
Public Defender
Sixth District Public Defender’s Office
Duluth, MN

Program Description: This presentation will address how two recent trends in forensic DNA analysis require stakeholders to re-evaluate the power of DNA evidence to accurately distinguish the guilty from the innocent. First, courts must learn to account for the increased sensitivity of current DNA testing methods and the ensuing risk that DNA recovered from a crime-scene is unrelated to the crime. Second, courts must learn to account for the increased use of probabilistic genotyping software programs and common misunderstandings about the meaning and limitations of the subsource likelihood ratios generated by such programs. Research exploring how each of these trends impacts stakeholders’ abilities to distinguish the guilty from the innocent is urgently needed to prevent wrongful convictions.

Educational Objectives: The goal of this presentation is to explore the urgent need to further research how recent technological advancements in forensic DNA analysis are impacting the administration of justice in the American criminal court system.

Impact on the Forensic Science Community: Several members of the forensic science community have either: (1) identified common misunderstandings about likelihood ratios among lay people, or (2) recognized the impact of highly sensitive testing methods on the detection of irrelevant DNA at a crime scene. The materials discussed in this presentation will impact the forensic science community by hopefully providing empirical guidance to practitioners and decision makers in cases where the presentation of subsource likelihood ratio could lead to a wrongful conviction. This presentation will also hopefully encourage researchers with technical expertise and resources to study whether existing procedural safeguards are sufficient to protect innocent defendants faced with incriminating DNA evidence.

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JUSTICE TALKS CASE BREAK SESSIONS

CB6  New Jersey’s Top 10 Most Wanted: Anthony Mota Apprehended

Saturday, February 24, 2024  8:00 AM – 9:00 AM  CE Hour: 1.0

Anna W. Delaney, MA
Forensic Anthropologist
New Jersey State Police
Hamilton, NJ

Program Description: This presentation will cover how the New Jersey State Police Fugitive Unit, New Jersey State Police Office of Forensic Sciences Forensic Anthropology Unit, and the United States Marshal’s Office were able to locate and close one of New Jersey’s Top 10 Most Wanted cases—the case of Anthony Mota. Even in death, we strive to resolve and provide closure and justice to our victims and their families.

Educational Objectives: After attending this presentation, attendees will understand how to execute an international exhumation, gain knowledge of the valuable resources that the United States Marshal’s Office can provide for assistance in cases, learn what samples provide the best DNA results, and the importance of documentation throughout a complex case.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by bridging the gap between international agencies working to achieve the same goals, demonstrating how to work collaboratively with multiple agencies across domestic and international jurisdictions, and informing attendees of the resources available from federal agencies.
Operation Death Harvester: How the FBI Is Dismembering the Illegal Trade in Human Body Parts

Paul Micah Johnson, PhD
Special Agent
Federal Bureau of Investigation
Detroit, MI

Program Description: This presentation is a case review of the largest human body parts industry investigation in the Federal Bureau of Investigation (FBI) history. Death Harvester was opened by the author as an organized crime case in the Detroit Field Office in 2011. Its purpose was to investigate the illegal sale of human remains for research and education that was taking place through a network of anatomical supply companies. What started with the finding of severed heads in a rusty van ultimately resulted in the seizing of thousands of human remains across the country, the closure of four body donation programs, the arrest and conviction of seven individuals, and the identification, cremation, and return of human remains to hundreds of victim families.

Educational Objectives: This presentation will help the attendee to better understand the global trade in human remains for research and education, the common crimes associated with the trade, what has been, and can still be, done to stop the illegal activity, and the roles that forensic science professionals can play.

Impact on the Forensic Science Community: The expertise of forensic pathologists and forensic anthropologists is regularly needed in criminal investigations of the human body parts trade, as are the skills of fingerprint examiners and a range of DNA specialists. Having a broad understanding of this industry and its common crimes will better prepare these forensic science professionals to assist with ongoing efforts to stem some of the rampant illegality. Additionally, this presentation will impact the forensic science community by helping all attendees to have a better understanding of the risks associated with donating one's body to science.
Paul C. Graf, MS  
Independent Consultant of Child Abuse Legal Matters  
Sr. Special Agent, NCIS (Retired)  
Castle Rock, CO

Program Description: Under any other circumstances, a child sex offender would have to approach a child and converse, which is a much more difficult hurdle in terms of circumstance, intellectual capability, and social functioning. Online communication has dispensed with much of the social skills and verbal communication required to seduce a child, which may have deterred some offenders, and given them direct access to children, many of whom are on-line with little or no adult/parent supervision. In response to this crisis, law enforcement has adopted a number of proactive strategies to enforce child-protective criminal statutes. Those statutes, the communication elements of the internet, and the development of law enforcement efforts in this field will be discussed.

Educational Objectives: After attending this presentation, attendees will: (1) learn what conduct on the part of individuals expressing a sexual interest in children is illegal, and what conduct, though possibly objectionable, is protected by United States Constitutionally guaranteed freedoms; (2) learn to identify the various communication elements of the internet; (3) be able to understand how persons expressing a sexual interest in children make use of the various communication components of the internet to contact both persons who share similar interests and potential child victims; and (4) be introduced to several proactive techniques used by law enforcement, and the technology that makes them possible, to target and investigate criminal child sex offenders online.

Impact on the Forensic Science Community: Federal statutes prohibit the possession of graphic Child Sexual Abuse Materials (CSAM), the distribution of CSAM images by any means, including computer, the buying and selling of children for the purpose of producing CSAM images, and interstate or foreign travel with the intent to engage in a sexual act with a child. Law enforcement’s proactive investigations often involve undercover communication with individuals who display a sexual interest in children; they document exchanges of illegal CSAM and rely heavily on face-to-face undercover meetings. This presentation will impact the forensic science community by delineating what conduct is and is not prohibited by federal and various state laws. A discussion of proactive law enforcement methods will be presented, as well as an explanation of the internet and its communication media components, such as the World Wide Web (WWW), the Dark Web, online gaming platforms, Internet Relay Chat (IRC), chat rooms, newsgroups, and file servers, all with case examples.
LUNCHEON SEMINARS

Pre-Registration Required — $85

LS1  W.W.G.D. (What Would Gibbs Do?): The Real Work of NCIS Special Agents

Thursday, February 22, 2024  12:00 PM – 1:30 PM  CE Hours:

Paul C. Graf, MS
Independent Consultant of Child Abuse Legal Matters
Sr. Special Agent, NCIS (Retired)
Castle Rock, CO

Program Description: The duties and responsibilities of a Naval Criminal Investigative Service (NCIS) Special Agent, along with real case examples, will be discussed through the lens of the real-life Jethro Gibbs.

Educational Objectives: After attending this presentation, attendees will be familiar with the duties and responsibilities of NCIS Special Agents and understand the similarities, and the many differences, between the NCIS television shows and “real life” NCIS work.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by developing awareness of the critical missions of NCIS Special Agents and their role in federal law enforcement.

When this presenter, Paul C. Graf, began his career with the US Naval Investigative Service (NIS), he often said it took well over 20 minutes to tell someone who he worked for and why he was asking so many questions. Now, and since the advent of the wildly popular CBS Television series NCIS and its offshoot programs (NCIS Los Angeles, NCIS New Orleans, NCIS Hawaii) the re-named Naval Criminal Investigative Service (NCIS) has become a household word. That said, many viewers still believe it to be a fictional agency and are surprised to hear the presenter spent 33 years conducting criminal, counter-intelligence, counter-terrorism and espionage as a Senior Special Agent of NCIS (aka: The Real Gibbs) Mr. Graf was assigned to offices in Long Beach, CA, Naples, Italy, Newport, RI, Brunswick, ME, and Guantanamo Bay, Cuba. His duties included narcotics investigation, grand larceny, sabotage, espionage, Double Agent Operations, homicide, arson, rape, procurement fraud, cold case homicide, and child abuse investigations, his specialty. In his role as an Executive Protection Supervisor, he led teams of armed Agents who protected military and civilian VIP’s and world leaders, worldwide. Mr. Graf conducted NCIS investigations and operations in 26 countries of the world. Therefore, the duties and responsibilities of an NCIS Special Agent, as seen through the lens of his extensive career, along with real case examples, will be discussed. The Forensic Science Community will, thus, develop an awareness of the critical missions of NCIS Special Agents and their role in Federal Law Enforcement.

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LUNCHEON SEMINARS

Pre-Registration Required — $85

LS2  Getting Things Started With a Bang: Interpreting Gunshot Sounds in Audio Forensic Analysis

Thursday, February 22, 2024  12:00 PM – 1:30 PM  CE Hours:

Robert C. Maher, PhD, PEng
Professor
Montana State University
Bozeman, MT

Program Description: This presentation begins with the historical background of gunshot audio interpretation, then provides several fascinating case studies of the current state-of-the art, demonstrating how gunfire sounds can provide essential forensic information. Attendees will learn the essential physical principles of how firearms make sounds and how those sounds are affected by the recording location and the recording system. At the conclusion of the seminar, attendees will understand how to interpret audio waveforms and spectrograms from gunshot audio recordings and how to apply their new knowledge to examples and case studies.

Educational Objectives: After attending this presentation, attendees will: (1) understand the basic physical principles of how firearms make sound and how gunshot sounds propagate through the air to the microphone; (2) have viewed waveforms and spectrograms of gunshot sounds, identifying the key features and important details; (3) understand how to interpret and knowledgeably discuss the strengths and weaknesses of various sources of gunshot audio recordings; (4) understand the basic features of contemporary gunshot detection and location systems, such as ShotSpotter™ from SoundThinking, Inc.; and (5) recognize the proper steps in handling user-generated audio evidence in forensic investigations.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by introducing the attendees to gunshot audio forensic examination.
LUNCHEON SEMINARS

Pre-Registration Required — $85

LS3  Human Spaceflight Medicolegal Death Investigations

Friday, February 23, 2024  12:00 PM – 1:30 PM  CE Hours:

Edward Mazuchowskic, MD, PhD
Forensic Pathologist
Forensic Pathology Associates
Division of HNL Lab Medicine
Allentown, PA

Program Description: This presentation will give an overview of the phases of human spaceflight and the unique challenges each phase presents. Past fatal mishaps will be reviewed. The current applicable protocols in regard to human spaceflight medicolegal death investigations, current knowledge gaps, and future challenges to these investigations will be discussed.

Educational Objectives: Upon completion of this workshop, attendees should be able to describe the phases of spaceflight and the unique challenges these phases present during a spaceflight death investigation.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a historical overview of human spaceflight medicolegal death investigations and an overview of current knowledge gaps and challenges for these investigations.

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**Program Description:** This presentation’s goal is to show the importance of the role each person plays in high stress, collaborative work groups that make up many of the various positions in the fields of forensic science. High stress work environments are where the substance of the work is difficult, there is increased pressure to be right, and heavy caseloads and rapid pace take a toll on both mental and physical health. Reducing the stress on the team improves the work culture for everyone.

There is no I in TEAM, but the argument can be made that there should be. The only person whose decisions and actions we can control is ourselves. We will take a quick 11-question multiple choice quiz to determine personality color and then explore how understanding ourselves and just as importantly, how others perceive us, can lead to better workplace interactions, reduce errors and improve the overall quality of our work and our agency culture.

**Educational objectives:** At the completion of this luncheon presentation, attendees will be able to: (1) identify their personality color by completing a short 11-question multiple choice quiz; (2) recognize the characteristics of their personality color and how they may be perceived by others; (3) discuss the importance of using personality color to improve communication; (4) examine studies related to secondary trauma in high stress work environments; (5) relate the concept of stress in the workplace to noise and errors; (6) describe the physical and mental effects of the high stress workplace, both primary and secondary; (7) discern the role one plays in challenging work situations; (8) evaluate the importance of leadership; and (9) explore ways to leverage the team’s talents.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by highlighting the benefits of knowing the individual’s personality color and the color of those they work with. It will include a brief 11-question multiple choice quiz to identify their personality color, to better understand how others perceive them and consider studies and techniques from the field of sociology to improve how they interact with others. We will examine the importance of leadership as a tool to enhance the workplace culture and how a positive work environment may even reduce errors. By understanding the only person whose decisions and actions we can control is ourselves we can endeavor to improve our high stress work environment for ourselves and everyone on the team.
WORKSHOPS

Pre-Registration Required—$225

W1 Recommendations From the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation

Monday, February 19, 2024
8:30 AM – 5:00 PM
CE Hours: 6.5

Program Description: In this workshop, we will walk participants through the National Institute of Standards and Technology (NIST)/National Institute of Justice (NIJ) Expert Working Group on Human Factors in Forensic DNA Interpretation Working Group process and highlight key findings, discuss some of the more controversial topics, and present implementation steps for the recommendations contained within the report.

Educational Objectives: Upon completion of this workshop, participants will be familiar with the recommendations in the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation report. They will know the implications of these recommendations for their own practice and how the recommendations serve to improve the practice of DNA examination.

Participants will be invited to discuss how relevant and feasible the recommendations are to their own practice and to the wider forensic DNA community.

Impact Statement: The study of human factors in forensic science is an essential element to inform our understanding of the interaction between humans and the systems they use. In understanding human factor issues, we can identify and address 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 effort provides guidance to DNA analysts, laboratory management, and legal practitioners on how to improve practice for safer justice outcomes.

Target Audience: Criminalistics, Jurisprudence

Knowledge Level Required: Basic

Chair:
Jarrah Kennedy, MSFS
Kansas City Police Crime Lab
Kansas City, MO

Co-Chair:
Angela Spessard, MSFS
Forensic Scientist III
Maryland State Police
Pikesville, MD

Presenters:
Mikalaa M. Martin, BS
Forensic Scientist
RTI International
Greenville, SC

Britton Morin, MSFS
Laboratory Director
Union County Prosecutor’s Office
Forensic Laboratory
Westfield, NJ

Nikola Osborne, PhD
Forensic Research Scientist
National Institute of Standards and Technology (Contractor)
Auckland, NEW ZEALAND

Tiffany Roy, JD, MSFS
Forensic DNA Expert
ForensicAid, LLC
West Palm Beach, FL

Melissa Taylor, BA
Sr. Forensic Science Research Manager
National Institute of Standards and Technology
Gaithersburg, MD

Hope Zagaria, MSFS
Research Forensic Social Scientist
RTI International
Alexandria, VA

All times are in the U.S. Mountain Time Zone
WORKSHOPS

W1 Recommendations From the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation

Program:

8:30 AM – 9:00 AM  Participant and Facilitator Introductions  
Melissa Taylor, BA

9:00 AM – 9:30 AM  Introduction to the NIST/NIJ Expert Working Group Series  
Melissa Taylor, BA

9:30 AM – 10:00 AM  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

10:00 AM – 10:30 AM  Management and Work Environment  
Britton Morin, MSFS

10:30 AM – 10:45 AM  BREAK

10:45 AM – 11:20 AM  Interpretation and Technology  
Hope Zagaria, MSFS; Angela Spessard, MFS

11:20 AM – 12:00 PM  Quantitative and Qualitative Expressions of DNA Results  
Nikola Osborne, PhD; Tiffany Roy, JD, MSFS

12:00 PM – 1:00 PM  BREAK

1:00 PM – 2:00 PM  Reporting and Testimony  
Tiffany Roy, JD, MSFS; Hope Zagaria, MSFS

2:00 PM – 3:00 PM  Interpretation of DNA Results Considered Alleged Activities  
Nikola Osborne, PhD; Tiffany Roy, JD, MSFS

3:00 PM – 3:15 PM  BREAK

3:15 PM – 4:15 PM  Education, Training, and Professional Credentialing  
Angela Spessard, MSFS

4:15 PM – 5:00 PM  Final Thoughts  
All Presenters
WORKSHOPS

Pre-Registration Required—$225

W2 Get Fired Up for Improvements to Fire Debris Standards! (Overview, Use, and Implementation of the Major Revisions to ASTM E1618)

Monday, February 19, 2024
8:30 AM – 5:00 PM
CE Hours: 6.75

Program Description: Attendees of this workshop will receive information and training on major revisions to the American Society for Testing and Materials (ASTM) E1618. Presenters will discuss why the revisions are needed, explain the new specifications for the ignitable liquid classification system, provide an overview of the performance-driven instrumental analysis requirements, and facilitate implementation of the new interpretation and reporting requirements through practical exercises. Intended as an introductory workshop, attendees will gain experience using these new specifications for classification of ignitable liquids and a practical understanding of how the updated requirements can reduce misattribution or misidentification of ignitable liquids in complex matrix samples.

Educational Objectives: After completing this workshop, attendees will: (1) be familiar with the major revisions currently being made to ASTM E1618-19 Standard Test Method for Ignitable Liquid Residues in Extracts from Fire Debris Samples by Gas Chromatography-Mass Spectrometry; (2) understand the potential impact of the revisions on their laboratory’s standard operating procedures; and (3) have basic experience in utilization of some of the revisions through completion of practical, hands-on exercises.

Impact Statement: The major revisions to ASTM E1618-19 provide additional information that is designed to clarify its requirements and improve consistency of its use in fire debris analysis. This workshop will impact the forensic science community’s practice by providing orientation and training related to implementation of the major revisions to ASTM E1618.

Target Audience: Criminalistics, Jurisprudence

Knowledge Level Required: Basic

Chair: Brenda B. Christy, MS
Forensic Scientist Supervisor
Virginia Department of Forensic Science
Norfolk, VA

Co-Chair: Laura J. Hernandez, BS
Director, Verity Labs Inc.
Las Cruces, NM

Presenter: Kimberly S. Kunkler, PhD
Assistant Professor
Marshall University
Huntington, WV

Program:

8:30 AM – 8:45 AM
Introductions, Workshop Design, and End Goals
Kimberly S. Kunkler, PhD

8:45 AM – 9:30 AM
Historical Background and Overview of Revisions
Laura J. Hernandez, BS

9:30 AM – 9:50 AM
GC/MS: Method Development and Optimization
Laura J. Hernandez, BS

9:50 AM – 10:15 AM
GC/MS: Philosophical Foundations for Performance-Based Requirements
Brenda B. Christy, MS

10:15 AM – 10:30 AM
BREAK

10:30 AM – 11:15 AM
QA/QC: Validation and Verification
Kimberly S. Kunkler, PhD
WORKSHOPS

W2 Get Fired Up for Improvements to Fire Debris Standards! (Overview, Use, and Implementation of the Major Revisions to ASTM E1618)

Program continued:

11:15 AM – 11:45 AM Overview of Classification
Laura J. Hernandez, BS

11:45 AM – 12:45 PM BREAK

12:45 PM – 1:30 PM Identification Criteria
Brenda B. Christy, MS

1:30 PM – 2:30 PM Interpretation Requirements
Brenda B. Christy, MS; Laura J. Hernandez, BS; Kimberly S. Kunkler, PhD

2:30 PM – 2:45 PM BREAK

2:45 PM – 4:45 PM Practical Exercise–Complex Case Sample
Brenda B. Christy, MS; Laura J. Hernandez, BS; Kimberly S. Kunkler, PhD

4:45 PM – 5:00 PM Summary
Brenda B. Christy, MS; Laura J. Hernandez, BS; Kimberly S. Kunkler, PhD

All times are in the U.S. Mountain Time Zone
W3  Machine Learning-Powered SpectrApp: An Open-Source Tool for Analyzing Forensic Spectroscopic Data

Monday, February 19, 2024  8:30 AM – 5:00 PM  CE Hours: 5.5

Program Description: Discover SpectrApp (https://www.spectrapp.unito.it), an innovative open-source tool developed by the esteemed Department of Chemistry at the University of Turin. Join us for an immersive workshop that showcases SpectrApp’s cutting-edge capabilities in forensic spectroscopic data analysis. This user-friendly tool combines advanced machine learning techniques with a seamless interface, catering to both experts and non-experts in the field. Participants will delve into the power of SpectrApp’s multivariate data analysis and chemometric strategies, facilitated by the R Shiny environment. Explore a vast array of graphical approaches, including univariate, bivariate, and multivariate visualizations, uncovering intricate patterns within complex datasets. Learn about SpectrApp’s support for cluster analysis, Principal Component Analysis (PCA), and other advanced methodologies, such as PLS-Discriminant Analysis (PLS-DA) and PLS-Regression (PLS-R). Witness how SpectrApp enables the prediction of new samples, empowering forensic analysis like never before. Don’t miss this enlightening workshop that showcases the potential of SpectrApp to revolutionize the future of forensic science through machine learning and data analysis.

Educational Objectives: Upon completion of this workshop, attendees will be able to: (1) familiarize themselves with SpectrApp; (2) utilize multivariate data analysis; (3) master chemometric strategies; (4) navigate graphical approaches; (5) apply PLS-DA and PLS-R; (6) predict new samples; (7) promote machine learning integration; and (8) advance forensic data exploration.

Impact on the Forensic Science Community: The session on SpectrApp will have a profound impact on the forensic science community by introducing a transformative tool that leverages Machine Learning for spectroscopic data analysis. Participants will gain invaluable insights and practical skills to navigate the complexities of forensic data, propelling them towards more accurate and efficient analyses. The workshop’s educational objectives emphasize the integration of cutting-edge techniques, such as multivariate data analysis and chemometric strategies, enabling forensic experts to extract meaningful information from intricate datasets.

By empowering both experts and non-experts with the user-friendly interface of SpectrApp, the workshop aims to democratize advanced data analysis in forensic science. This accessibility will promote broader adoption and foster a culture of collaboration and knowledge-sharing within the community.

Target Audience: Digital & Multimedia Sciences, General

Knowledge Level Required: Basic

Chair:
Eugenio Alladio, PhD
Assistant Professor
Department of Chemistry
University of Torino
Torino, Piemonte, ITALY

Co-Chair:
Paolo Garofano, MD, PhD
COO
Centro Regionale Antidoping “A. Bertinaria”
Lazio, Rome, ITALY
WORKSHOPS

W3  Machine Learning-Powered SpectrApp: An Open-Source Tool for Analyzing Forensic Spectroscopic Data

Program:

8:30 AM –  9:00 AM  Session Introduction
Paolo Garofano, MD, PhD

9:00 AM –  9:30 AM  Familiarizing Participants With SpectrApp
Paolo Garofano, MD, PhD

9:30 AM – 10:30 AM  Multivariate Data Analysis and Chemometric Strategies
Eugenio Alladio, PhD

10:30 AM – 11:00 AM  BREAK

11:00 AM – 12:30 PM  Graphical Approaches and Data Visualization Strategies
Eugenio Alladio, PhD

12:30 PM –  1:30 PM  BREAK

1:30 PM –  3:00 PM  Supervised Regression Modeling
Eugenio Alladio, PhD

3:00 PM –  3:30 PM  BREAK

3:30 PM –  4:00 PM  Supervised Regression Modeling
Eugenio Alladio, PhD

4:00 PM –  4:30 PM  Questions and Answers/Discussion
Paolo Garofano, MD, PhD

4:30 PM –  5:00 PM  Closing Remarks
Paolo Garofano, MD, PhD

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$225

W4 Inside the Black Box: Forensic Psychiatry for Lawyers 2.0

Program Description: This workshop will cover the history of forensic psychiatry, the use and types of experts, and the clinical and ethical guidelines followed. We will discuss the crucial differences between a treating clinician and an expert, the use and misuse of psychological testing, and the application of case law and statutes to appropriately answer psychiatric-legal questions. The workshop will be interactive with case debates prepared by the presenters and invited submissions from attendants. The workshop is designed to help inform attorneys how to work more effectively with mental health experts, as well as confidently navigate the ethical waters when doing so.

Educational Objectives: This workshop will help attendees: (1) have an expanded understanding of mental illness; (2) learn how to effectively utilize an expert psychiatric witness in criminal and civil cases; (3) understand the difference between appropriate and inappropriate consult questions for the expert; (4) learn about unethical expert witnesses, how to spot them, why to avoid them, and effectively crossing them; and (5) understand the ethical obligations of an expert witness and anticipate when these can conflict with an attorney’s ethical duties.

Impact on the Forensic Science Community: This workshop will have a positive impact in terms of helping attorneys work more effectively and ethically with experts in the mental health field. The skill and knowledge acquired will also help inform members of the forensic mental health field to avoid some of the pitfalls that can occur in the midst of complex legal cases. Some of the ethical issues examined will be generalizable to other expert witnesses.

Target Audience: Jurisprudence, Psychiatry & Behavioral Science

Knowledge Level Required: Basic

Chair:
Corina Freitas, MD
Forensic Psychiatrist
Freitas and Associates LLC
Alexandria, VA

Co-Chair:
Vivian Shnaidman, MD
Forensic Psychiatrist
Jersey Forensic Consulting
Princeton, NJ

Presenter:
George D. Annas, MD, MPH
Forensic Psychiatrist
Jersey Forensic Consulting, LLC
Syracuse, NY

Program:

8:30 AM – 9:30 AM Introduction to Psychiatry and Forensic Psychiatry
Corina Freitas, MD

9:30 AM – 11:30 AM How to Formulate a Psychiatric-Legal Question
Vivian Shnaidman, MD

11:30 AM – 12:30 PM BREAK

12:30 PM – 2:30 PM Forensic Psychiatry Topics
Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD, MPH

2:30 PM – 2:45 PM BREAK

2:45 PM – 4:00 PM Active Case Participation
Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD, MPH

4:00 PM – 4:30 PM Questions and Answers/Discussion

All times are in the U.S. Mountain Time Zone
**WORKSHOPS**

*Pre-Registration Required—$225*

**W5**  Forensic Postmortem Radiology and Medicolegal Death Investigations

**Program Description:** This workshop is an update on current practices in forensic postmortem radiology and medicolegal death investigations. National and international forensic pathology and radiology practitioners will provide an introduction to and update on best practices in the field.

**Educational Objectives:** After attending this workshop, attendees will: (1) be informed of the different modalities for postmortem radiology; (2) understand the strengths and weaknesses of the different current modalities; (3) learn about the interpretation of the postmortem radiology scans and levels of forensic evidence; and (4) be aware of current advances, collaboration, and potential resources available to interested practitioners.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by providing attendees with expertise on best practices, interpretation of radiology imaging, and incorporation of forensic postmortem radiology into medicolegal death investigations.

**Target Audience:** Anthropology, General, Pathology/Biology

**Knowledge Level Required:** Basic

**Chair:** Summer J. Decker, PhD
Professor, Director of 3D Clinical Applications & Vice Chair of Radiology Department of Radiology University of South Florida Tampa, FL

**Co-Chair:** Edward Mazuchowski, MD, PhD
Forensic Pathologist Forensic Pathology Associates Division of HNL Lab Medicine Allentown, PA

**Presenters:**
Natalie L. Adolphi, PhD
Associate Professor New Mexico Medical Investigator Office Albuquerque, NM

Fabrice Dedouit, MD, PhD
Forensic Pathologist Hopital Rangueil Toulouse, Midi-Pyrenees, FRANCE

Lars Ebert, PhD
3D Center Department Co-Head Institute for Forensic Medicine University of Zürich Zürich, SWITZERLAND

Jamie Elifritz, MD
Forensic Radiologist New Mexico Medical Investigator Office Albuquerque, NM

Jonathan M. Ford, PhD
Associate Professor Department of Radiology University of South Florida Tampa, FL

Michael J. Thali, MD
Professor and Chair Institute of Forensic Medicine University of Zürich Zürich, SWITZERLAND

**Program:**

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<tr>
<th>Time</th>
<th>Session</th>
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| 8:30 AM – 8:45 AM | **Introductions and Overview**  
Edward Mazuchowski, MD, PhD; Summer J. Decker, PhD |
| 8:45 AM – 9:15 AM | **Forensic Imaging Modalities: Basic Principles and Interpretation**  
Jamie Elifritz, MD |
| 9:15 AM – 9:45 AM | **Natural Disease, Postmortem Changes and Artifacts**  
Jamie Elifritz, MD |
| 9:45 AM – 10:15 AM | **Cardiac Imaging and Postmortem Angiography**  
Fabrice Dedouit, MD, PhD |
| 10:15 AM – 10:30 AM | **BREAK** |

All times are in the U.S. Mountain Time Zone
WORKSHOPS

W5  Forensic Postmortem Radiology and Medicolegal Death Investigations

Program continued:

10:30 AM – 11:30 AM  Traumatic Injuries and Overdoses
Edward Mazuchowski, MD, PhD

11:30 AM – 12:30 PM  Interactive Cases
All Presenters

12:30 PM – 1:30 PM  BREAK

1:30 PM – 2:00 PM  Postmortem Imaging: International Perspective
Michael J. Thali, MD

2:00 PM – 2:30 PM  3D Visualization and Court Presentation
Summer J. Decker, PhD

2:30 PM – 3:00 PM  Emerging Technologies in Forensic Imaging
Jonathan M. Ford, PhD; Lars Ebert, PhD

3:00 PM – 3:15 PM  BREAK

3:15 PM – 3:45 PM  Interactive Cases
All Presenters

3:45 PM – 4:15 PM  Development of a Forensic Imaging Service in a Medical Examiner Office
Natalie L. Adolphi, PhD

4:15 PM – 5:00 PM  Panel Discussion With Audience Participation
All Presenters

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$125

W6  Don’t Know Much About Standards: Incorporating Forensic Science Standards Into University Curricula

Monday, February 19, 2024  8:30 AM – 12:30 PM  CE Hours: 3.75

Program Description: During this presentation, representatives from universities and the Forensic Science Education Programs Commission (FEPAC) will present on ways they have incorporated standards into their university programs, examples of specific courses where students’ knowledge has been enhanced by such standards, and how to overcome obstacles of changing curriculum to include private sector standards. Representatives from forensic laboratories will present on how hiring practitioners with a knowledge of standards affects their practices, as well as how they are implementing standards into lab training and standard operating procedures. The latter portion of the workshop will be comprised of a panel, including educators, lab managers, young forensic professionals, and recent university graduates, to discuss how forensic standards are changing, and will continue to change, the landscape of forensic education and training.

Educational Objectives: After attending this presentation, attendees will have a better understanding of how incorporating standards in an educational curriculum affects students’ understanding of the discipline and forensic sciences when they enter post-graduate employment.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by creating greater awareness of how standards are currently being implemented in university level educational programs, and how lab managers have both incorporated standards into their training, and how they use standards for minimum qualifications and education of practitioners.

Target Audience: All Disciplines

Knowledge Level Required: Basic

Chair:
Heidi Eldridge, PhD
Professor
The George Washington University
Washington, DC

Co-Chair:
Julie A. Howe, MBA
Associate Professor
Saint Louis University
Saint Louis, MO

Presenters:
Teresa L. Ambrosius, BA
Secretariat
AAFS Standards Board
Colorado Springs, CO

A. Karl Larsen, Jr., PhD
Clinical Professor of Forensic Science
University of Illinois at Chicago
Chicago, IL

Jennifer Limoges, MS
Associate Director of Forensic Science/Toxicology
New York State Police
Albany, NY

Arely J. Parra López, BS
Graduate Student Researcher
The George Washington University
Eaton, CO

Sarah Seashols Williams, PhD
Associate Professor
Virginia Commonwealth University
Richmond, VA

Britni Skillman, PhD
Assistant Professor
Sam Houston State University
Huntsville, TX

Peter Stout, PhD
President and CEO
Houston Forensic Science Center
Houston, TX

McKenzie Weyh, BS
Forensic Document Examiner
Michigan State Police
Lansing, MI

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WORKSHOPS

W6  Don’t Know Much About Standards: Incorporating Forensic Science Standards Into University Curricula

Program:

8:30 AM – 8:45 AM  Another Brick in the Wall: An Introduction and History of Standards in Education
Teresa L. Ambrosius, BA

8:45 AM – 9:15 AM  The Beatings Will Continue Until Morale Improves: How to Teach Standards Without Making Students Hate You
Heidi Eldridge, PhD

9:15 AM – 9:45 AM  This Seems So Easy, But It Is All So Important
A. Karl Larsen, Jr., PhD

Sarah Seashols Williams, PhD

10:15 AM – 10:30 AM  BREAK

10:30 AM – 11:00 AM  On to the Real World: How University Forensic Standards Education Benefits the Laboratory
Jennifer Limoges, MS

11:00 AM – 11:30 AM  Standards and Accreditation as Seen by the Wild-Eyed Heretic in Houston
Peter Stout, PhD

11:30 AM – 12:30 PM  Panel Discussion/Questions and Answers
All Presenters

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$125

W7  Emerging Semi-Synthetic Cannabinoids: THC Isomers and Analogs

Monday, February 19, 2024  8:30 AM – 12:30 PM  CE Hours: 3.75

Program Description: This workshop will address the growing semi-synthetic cannabinoid market from both a toxicological and a seized drug chemistry perspective. It will provide an overview of the legislation and scheduling of THC-related compounds in the United States, discuss drug trends in semi-synthetic cannabinoids in both Europe and the United States, and review analytical methods for the separation of THC isomers in seized drug material. This workshop will also focus on the known pharmacological activity and potency of currently available semi-synthetic cannabinoids, provide reviews of cross-reactivity of the cannabinoid isomers and analogs on the commercially available immunoassay platform, and describe analytical methods for isomer separation in toxicological samples. Finally, delta-8-THC blood concentrations and trends in the Driving Under the Influence of Drugs (DUID) cohort will be presented.

Educational Objectives: After attending this presentation, attendees will be familiar with semi-synthetic cannabinoids such as delta-8-THC, THC-P, HHC, etc., their appearance in various cannabis-containing products, their potency, and their legality. Additionally, attendees will understand analytical challenges associated with these newly emerging THC isomers and analogs and how to resolve chromatographic interferences.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a legal, pharmacological, and analytical overview of emerging semi-synthetic cannabinoid products.

Target Audience: Criminalistics, General, Toxicology

Knowledge Level Required: Basic

Chair: Ayako Chan-Hosokawa, MS
Toxicology Team Manager
NMS Labs,
Horsham, PA

Co-Chair: Sarah A. Shuda, MS
Senior Scientist
CFSRE
Willow Grove, PA

Presenters: Joanna De Morais
Scientific Analyst
EMCDDA
Lisbon, PORTUGAL

Barry K. Logan, PhD
Executive Director
CFSRE
Horsham, PA

Nicole Lattanzio, MS
Forensic Chemistry Technical Director
NMS Labs
Willow Grove, PA

Erin Karschner, PhD
Forensic Toxicologist
Armed Forces Medical Examiner System
Dover AFB, DE

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WORKSHOPS

W7 Emerging Semi-Synthetic Cannabinoids: THC Isomers and Analogs

Program:

8:30 AM – 9:00 AM  THC Legislation and Scheduling in the United States
                    Barry K. Logan, PhD

9:00 AM – 9:30 AM  Seized Drug Trends and Results
                    Nicole Lattanzio, MS

9:30 AM – 10:15 AM European Perspectives on Semi-Synthetic Cannabinoids—Virtual Presentation
                    Joanna De Morais

10:15 AM – 10:30 AM BREAK

10:30 AM – 11:10 AM Quantitative Analytical Methods Used in Seized Drug Materials
                    Sarah A. Shuda, MS

11:10 AM – 11:40 AM Overview: Potency and Pharmacological Activity of THC Analogs
                    Erin Karschner, PhD

11:40 AM – 12:10 PM Toxicology Analytical Methods and Trends
                    Ayako Chan-Hosokawa, MS

12:10 PM – 12:30 PM Questions and Answers
WORKSHOPS

Pre-Registration Required—$125

W8 Non-Fatal Strangulation: An Update on Practice and Current Literature

Monday, February 19, 2024  8:30 AM – 12:30 PM  CE Hours: 3.5

Program Description: “He only choked me…” Anoxic brain injury can occur in minutes. Nonfatal strangulation and its associated effects are not well understood by responding providers. This 4-hour workshop provides a background in research and enhances skills in evaluating nonfatal strangulation. This potential lethal act is present in more cases than one thinks. The workshop presenters plan discussions around how the current evidence impacts the investigation, documentation, care, and prosecution of strangulation cases. Long-term effects such as traumatic brain injury are now being studied with current information to be discussed. Key concepts will be illustrated through the use of case studies and group discussion.

Impact on the Forensic Science Community: Many disciplines who investigate, provide care, or prosecute cases where nonfatal strangulation is a component benefit from understanding this topic. Investigators and crime scene personnel will be able to better recognize and investigate this potentially lethal act. Health care providers must properly assess and treat those who have experienced strangulation. Finally, prosecutors must develop knowledge about how to charge and prosecute for this action and to effectively use the expert witness to convey the significance that strangulation has on the victim.

Target Audience: Criminalistics, Forensic Nursing Science, General, Jurisprudence, Pathology/Biology, Psychiatry & Behavioral Science, Toxicology

Knowledge Level Required: Intermediate

Chair: Stacey A. Mitchell, DNP
Clinical Professor and Director
Texas A&M University School of Nursing
Magnolia, TX

Co-Chair: Kathy Bell, MS
Adjunct Faculty
Oklahoma State University
Center for Health Sciences
Tulsa, OK

Presenters:
Sean P. Dugan, MD
Director of Forensic Services
Shasta Community Forensic Care Team
Shasta Community Health Center
Redding, CA

Diana A. Faugno, MSN
Forensic Nurse
AFN
Escondido, CA

Patricia M. Speck, DNSc
Professor/Coordinator of Advanced Forensic Nursing
University of Alabama at Birmingham
School of Nursing
Hoover, AL

Jessica Volz, DNP
Clinical Director of Forensics
Adventist HealthCare
Shady Grove Medical Center
Rockville, MD

Program:

8:30 AM – 8:45 AM  Introduction and Welcome
Diana A. Faugno, MSN; Patricia M. Speck, DNSc

8:45 AM – 9:05 AM  Strangulation Refresher
Kathy Bell, MS

9:05 AM – 9:35 AM  Review of Strangulation Data: How One Program Is Addressing the Issue
Jessica Volz, DNP

9:35 AM – 10:20 AM  Strangulation Literature Review
Stacey A. Mitchell, DNP; Kathy Bell, MS

10:20 AM – 10:30 AM  BREAK

10:30 AM – 11:00 AM  Long-Term Effects of Strangulation
Sean P. Dugan, MD

11:00 AM – 12:00 PM  Assessment and Documentation
Sean P. Dugan, MD

12:00 PM – 12:30 PM  Analysis of Case Studies
Val Sievers

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W9 The Requirements and Implementation of ANSI/ASB Standard 123—Standard for Routine Internal Evaluation of a Laboratory’s DNA Interpretation and Comparison Protocol: Laboratory and Legal Perspectives

Program Description: Several studies conducted over the past 20 years have demonstrated the inconsistent use of the interpretation and comparison protocols within some DNA testing laboratories as well as variability in the reporting of results and conclusions, especially when complex DNA profiles were evaluated that fell outside of the types of profiles routinely evaluated during mandatory proficiency testing. A standard, drafted by the Organization of Scientific Area Committees (OSAC) and developed by the Academy Standards Board (ASB), provides for the continued monitoring of the efficacy and consistent use of the laboratory’s protocol. This workshop will focus on the specific requirements of Standard 123 and provide effective mechanisms for implementation of the standard, including the evaluation of the resulting data to ensure quality interpretation and comparison of DNA data. DNA analysts and attorneys will provide insights regarding the importance of and value added through the implementation of this standard.

Educational Objectives: After attending this workshop, attendees will have a heightened understanding of: (1) the need to monitor the efficacy and consistency of use of the laboratory DNA interpretation and comparison protocols; (2) the specific requirements of Standard 123 and how to implement the standard in a DNA testing laboratory effectively in conjunction with other relevant DNA standards; (3) how to assess the results of the internal evaluation process with appropriate corrective actions; and (4) the legal perspective regarding the consistent use of high-quality interpretation and comparison protocols prior to- and post-conviction and how that may help to provide “Justice for All.” The attendees will have the opportunity to network with the speakers and other attendees while discussing implementation options.

Impact on the Forensic Science Community: This workshop will impact the forensic science community and the “Justice for All” initiative by providing information to laboratory staff, attorneys, and judges regarding the value of performing an annual review of the forensic science service provider’s interpretation and comparison protocols. Guidance for monitoring and evaluating the consistency of use and suitability of the protocol within a DNA laboratory via implementation of the ANSI/ASB Standard 123, Standard for Routine Internal Evaluation of the Laboratory’s DNA Interpretation and Comparison Protocol, and its possible effect on the judicial system will be the main focus of this workshop.

Target Audience: Criminalistics, Jurisprudence

Knowledge Level Required: Basic

Chair:
Charlotte Word, PhD
Consultant
Richmond, VA

Co-Chair:
Virginia Barron, JD
Attorney, Law Office
Westbrook, MN

Presenters:
Brian Higgins, MSFS
Supervisory Biologist
USACIL
Forest Park, GA

Ashley Luther, MS
Forensic Biology Supervisor
Indiana State Police Laboratory
Indianapolis, IN

Terri Rosenblatt, JD
Chief, Post Conviction Justice Unit
New York County District Attorney’s Office
New York, NY

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## WORKSHOPS

**W9**  
The Requirements and Implementation of ANSI/ASB Standard 123—Standard for Routine Internal Evaluation of a Laboratory’s DNA Interpretation and Comparison Protocol: Laboratory and Legal Perspectives

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<td>Welcome and Opening Remarks</td>
<td>Charlotte Word, PhD; Virginia Barron, JD</td>
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<tr>
<td>1:15 PM – 1:35 PM</td>
<td>Historical Perspective and Necessity for Implementation of Standard 123</td>
<td>Charlotte Word, PhD</td>
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<td>1:35 PM – 2:05 PM</td>
<td>Requirements in Standard 123</td>
<td>Brian Higgins, MSFS</td>
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<td>2:05 PM – 2:25 PM</td>
<td>How Standard 123 Helps Better Ensure Justice For All in the Judicial System—A Legal Perspective</td>
<td>Virginia Barron, JD</td>
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<td>2:25 PM – 2:40 PM</td>
<td>BREAK</td>
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<tr>
<td>2:40 PM – 3:30 PM</td>
<td>Internal Evaluation and Background for Standard 123</td>
<td>Ashley Luther, MS</td>
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<tr>
<td>3:30 PM – 3:55 PM</td>
<td>Thoughts on Implementation in a Laboratory Based on the Requirements</td>
<td>Brian Higgins, MSFS</td>
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<td>3:55 PM – 4:25 PM</td>
<td>Informing the Future and Revisiting the Past</td>
<td>Ashley Luther, MS</td>
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<td>4:25 PM – 4:45 PM</td>
<td>Legal Perspective—Standards and Post-Conviction Issues</td>
<td>Terri Rosenblatt, JD</td>
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<td>4:45 PM – 5:00 PM</td>
<td>Wrap-Up and Discussion</td>
<td>All Presenters</td>
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WORKSHOPS

Pre-Registration Required—$125

W10  Evolving Approaches and Technologies to Address Existing Challenges in Seized Drug Analysis

Monday, February 19, 2024  1:00 PM – 4:30 PM  CE Hours: 3.0

Program Description: Challenges with the analysis of seized drugs have necessitated research into alternative approaches and technologies to assist forensic laboratories with the identification and quantification of unknown seized drugs. These challenges include the rapidly evolving nature of the seized drug landscape, with the continued emergence of Novel Psychoactive Substances (NPS), the identification of closely related chemical substances, the detection of minor components in mixtures, the differentiation of hemp and marijuana, screening of multiple subunits, and growing backlogs. However, there is a considerable divide between the research community developing these alternative approaches and technologies and actual implementation by practicing forensic laboratories. The Evolving Approaches and Technologies for Seized Drug Analysis subcommittee was established to specifically address this divide by the Forensic Laboratory Needs Technology Working Group (FLN-TWG), which is housed at the National Institute of Justice (NIJ) and supported by the Forensic Technology Center of Excellence (FTCOE) through a cooperative agreement with RTI International.

Educational Objectives: After attending this workshop, attendees will have learned about readily implementable evolving approaches and technologies to address existing challenges in seized drug analysis. The attendees will learn about emerging technologies, such as Direct Analysis in Real Time-Mass Spectrometry (DART*-MS), gas chromatography-vapor-phase infrared spectroscopy (GC-VIR), Gas Chromatography-Vacuum Ultraviolet spectroscopy (GC-VUV), and Ultra-High Performance Liquid Chromatography-Photo Diode Array Ultraviolet single quadrupole Mass Spectrometry (UHPLC-PDA UV-MS). In addition, attendees will also learn about evolving approaches, such as microcrystal tests and the analysis of marijuana and marijuana products.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by providing chemists, section leaders, and laboratory managers with the necessary information to determine which evolving approach or technology may be most appropriate to address their specific laboratory needs. Aspects such as the approximate cost, analysis time, capabilities, limitations, and specific challenges that each approach or technology can help address will be provided. Informing the seized drug community about the strengths and limitations of the identified evolving approaches and technologies will better prepare forensic laboratories to make informed decisions about how to combat their specific challenges in seized drug analysis.

Target Audience: Criminalistics, General

Knowledge Level Required: Basic

Chair:
J. Tyler Davidson, PhD
Assistant Professor
Sam Houston State University
Conroe, TX

Co-Chair:
Edward Sisco, PhD
Research Chemist
National Institute of Standards and Technology
Gaithersburg, MD

Presenters:
Amber K. Burns, MS
Forensic Chemistry Manager
Maryland State Police
Forensic Sciences Division
Pikesville, MD

Ira Lurie, PhD
Adjunct Professor/Research Professor
The George Washington University
Washington, DC

Frances Scott, PhD
Program Manager
National Institute of Justice
Washington, DC

Sherri L. Tupik, BS
Senior Forensic Chemist
Drug Enforcement Administration
Dulles, VA

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## WORKSHOPS

**W10  Evolving Approaches and Technologies to Address Existing Challenges in Seized Drug Analysis**

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<td>Welcome and Introduction</td>
<td>J. Tyler Davidson, PhD</td>
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<td>1:15 PM – 1:45 PM</td>
<td>Direct Analysis in Real Time-Mass Spectrometry (DART®-MS)</td>
<td>Edward Sisco, PhD</td>
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<tr>
<td>1:45 PM – 2:15 PM</td>
<td>Gas Chromatography-Vapor-Phase Infrared Spectroscopy (GC-VIR)</td>
<td>Sherri L. Tupik, BS</td>
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<tr>
<td>2:15 PM – 2:30 PM</td>
<td>Gas Chromatography-Vacuum Ultraviolet Spectroscopy (GC-VUV)</td>
<td>Ira Lurie, PhD</td>
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<td>BREAK</td>
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<td>2:45 PM – 3:15 PM</td>
<td>Ultra-High Performance Liquid Chromatography-Photo Diode Array/Ultraviolet/Single Quadrupole Mass Spectrometry (UHPLC-PDA/UV/MS)</td>
<td>Ira Lurie, PhD</td>
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<td>3:15 PM – 4:00 PM</td>
<td>Microcrystal Tests</td>
<td>Frances Scott, PhD</td>
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<tr>
<td>4:00 PM – 4:30 PM</td>
<td>Marijuana and Marijuana Products</td>
<td>Frances Scott, PhD; Amber K. Burns, MS</td>
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</tbody>
</table>

All times are in the U.S. Mountain Time Zone
W11 Police Officers Injured in the Line of Duty: The Role of Peer Support in Recovery

Monday, February 19, 2024 1:00 PM – 4:30 PM  CE Hours: 3.0

Program Description: This presentation will provide an overview of the circumstances that led up to the wounding of New York police officers and the challenges that they faced and still endure. We will engage in an interactive discussion with these officers and learn how they faced aspects of their physical and psychological recovery and the role other factors played in their seeking help such as individual characteristics, the availability of peer support, stigma, family, and social support, gratitude, resilience, and satisfaction with life. Special focus will be given to a traumatic brain injury caused by firearm. This workshop will discuss topics requiring basic knowledge pertaining to brain anatomy, brain function and cognitive and psychological effects of Traumatic Brain Injury (TBI).

Educational Objectives: After attending this workshop, attendees will: (1) better understand the experiences of police officers who have been severely injured in the line of duty; (2) build skills to identify the many challenges one can face while recovering from a TBI caused by a gunshot wound to the head; (3) be made aware of the physical damaged caused by a Gunshot Wound (GSW) to the head; (4) appreciate the effects of TBI on cognitive and psychological assessment protocols; (5) be informed about the current empirical research and literature on peer assistance programs, peer support, and peer-facilitated interventions for police officers; and (6) have a better understanding of the role social support, gratitude, resilience, and satisfaction with life have on recovery.

Impact on the Forensic Science Community: Presentations in this workshop will impact the forensic science community through detailed accounts of police officers who were injured in the line of duty. Through their first-hand accounts, these officers will discuss their road to recovery and associated psychological sequela and its impact on their families. The forensic science community was previously introduced to the one of the officers (LCJ) through a presentation at the 75th AAFS Annual Scientific Conference. This workshop will provide the most up-to-date information on the role, responsibilities, and best practices associated with a Peer Support Program.

Target Audience: General, Psychiatry & Behavioral Science

Knowledge Level Required: Basic

Chair:
Gregory I. Mack, PhD
Deputy Director
Psychological Evaluation Section
Medical Division
New York City Police Department
Shrub Oak, NY

Co-Chair:
Daniel A. Martell, PhD
Clinical Faculty
UCLA School of Medicine
Irvine, CA

Presenters:
Jamie M. Elifritz, MD
Partner/Medical Director
Forensic Radiology Group
Department of Radiology
University of New Mexico
Albuquerque, NM

Matthew Frank
Chairman/Co-Founder
Westchester B.L.U.E. Foundation
Port Chester, NY

Learie C. Johnston, BA
Board of Directors/Detective (retired)
Westchester B.L.U.E. Foundation/Mount Vernon Police Department
Mount Vernon, NY

Paul Puccini
Trustee, Board of Directors
Westchester B.L.U.E. Foundation
New Rochelle, NY
WORKSHOPS

W11  Police Officers Injured in the Line of Duty: The Role of Peer Support in Recovery

Program:

1:00 PM – 1:10 PM  Welcome to the Workshop/Introduction  
Gregory I. Mack, PhD; Daniel A. Martell, PhD

1:10 PM – 1:30 PM  Police Officers Injured in the Line Of Duty: A Clear and Present Danger  
Gregory I. Mack, PhD

1:30 PM – 2:45 PM  Case Review: An Analysis of the Facts, the Injuries, and the Recovery  
Learie C. Johnston, BA; Matthew Frank, Paul Puccini; Gregory I Mack, PhD

2:45 PM – 3:00 PM  BREAK

3:00 PM – 3:25 PM  Prevalence of Traumatic Brain Injury and Comorbid Disorders Among First Responders  
Gregory I. Mack, PhD

3:25 PM – 3:50 PM  Forensic Interpretation of Medical Images  
Jamie Elifritz, MD

3:50 PM – 4:15 PM  Police Peer Support Programs: A Moral and Ethical Duty of Care  
Learie C. Johnston, BA; Matthew Frank, Paul Puccini; Gregory I Mack, PhD

4:15 PM – 4:30 PM  Discussion/Questions  
All Presenters
WORKSHOPS

Pre-Registration Required—$125

W12  Reading the Blueprint to Construct the Framework: Demystifying Forensic Accreditation

Monday, February 19, 2024  1:00 PM – 5:30 PM  CE Hours: 4.0

Learning Overview: This workshop will provide an overview of the Framework for Accreditation of Forensic Units developed as part of cooperative agreement 70NANB21H098 with the National Institute of Standards and Technology (NIST) that can be used by forensic service providers through the accreditation process. The workshop will review the benefits, and the drawbacks, to accreditation for an organization, particularly with respect to Crime Scene Investigation (CSI) and latent print units. It will also discuss why accreditation of Forensic Science Service Providers (FSSPs) is important to the criminal justice system using practical examples in forensics as well as other industries. Attendees will learn what a forensic accreditation program consists of and the structure of the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) 17020 and ISO/IEC 17025 standards used to build a framework, along with the similarities and differences between the two. Attendees will learn how to approach building a quality management system and the overall accreditation process as well as tips for reading and interpreting standards.

Educational Objectives: After attending this workshop, attendees will understand some principles of ISO accreditation programs and quality management, necessary elements of the requirements in each standard (ISO/IEC 17020 and ISO/IEC 17025), and guidance on how to meet the requirements. Attendees will be provided with resources to help them develop an effective quality management system and become an accredited forensic service provider.

Impact on the Forensic Science Community: This presentation will impact those in forensic science who are considering accreditation, or beginning the process of obtaining accreditation, by explaining the pieces needed to build a framework of accreditation.

Target Audience: Criminalistics, Digital & Multimedia Sciences, General

Knowledge Level Required: Basic

Chair:
Nicole S. Jones, MS
Director
RTI International
Research Triangle Park, NC

Co-Chair:
Erin P. Forry, MS
Research Forensic Scientist
RTI International
Research Triangle Park, NC

Presenters:
Allison Getz, BS
Physical Scientist
National Institute of Standards and Technology (NIST)
Monrovia, MD

John H. Grassel, MS
Senior Manager
RTI International
Apex, NC

All times are in the U.S. Mountain Time Zone
## WORKSHOPS

### W12  Reading the Blueprint to Construct the Framework: Demystifying Forensic Accreditation

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<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tr>
<td>1:00 PM – 1:15 PM</td>
<td>Welcome and Introductions</td>
<td>Allison Getz, BS</td>
</tr>
<tr>
<td>1:15 PM – 2:15 PM</td>
<td>Defining the Task: High-Level Explanation of Quality Management System and Accreditation</td>
<td>Erin P. Forry, MS</td>
</tr>
<tr>
<td>2:15 PM – 3:15 PM</td>
<td>Choosing the Blueprint—ISO/IEC 17020 or ISO/IEC 17025: Review of the Similarities and Differences Between the Two Standards</td>
<td>Nicole S. Jones, MS</td>
</tr>
<tr>
<td>3:15 PM – 3:30 PM</td>
<td>Break</td>
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</tr>
<tr>
<td>3:30 PM – 4:30 PM</td>
<td>What’s Already in the Toolshed? Provide Approaches in Building the QMS</td>
<td>Erin P. Forry, MS</td>
</tr>
<tr>
<td>4:30 PM – 5:30 PM</td>
<td>Perspective of Quality Management and Accreditation in Laboratory Programs, Crime Scene Investigation Units, and Single Person FSSPs</td>
<td>John H. Grassel, MS</td>
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WORKSHOPS

Pre-Registration Required—$225

W13  Beyond the “Who Done It . . .” DNA Interpretation Given Activity Level Propositions

Program Description: This workshop will demonstrate peer-reviewed, published methods for evaluating DNA evidence given activity level propositions as well as related testimony at court. DNA testimony has moved past the “Who?” questions related to the source of the DNA and it is now common for questions to be asked about “How?” the DNA ended up on the evidence item. While this is often done using hypothetical questions designed to elicit vague answers about “possible” or “could have” or “consistent with,” there are published frameworks and reporting and testimony guidelines available to assist both experts and the court. This workshop will cover the theory and application of Case Assessment and Interpretation (CAI) and Bayesian networks (BN) to evaluate DNA evidence profiles given activity level propositions and the communication of these results via report writing and testimony. A combination of lectures, demonstrations, and hands-on group activities will be used in this workshop. Challenges in both the evaluation of the evidence and with testimony within an adversarial court system will be addressed as well.

Educational Objectives: After attending this workshop, attendees will be able to communicate expert knowledge on the evaluation of DNA evidence given activity level propositions using a scientifically sound framework and published practices. Participants will understand how to apply the Case Assessment and Interpretation (CAI) framework to perform case pre-assessments, formulate activity level propositions, and assign likelihood ratios for biological evidence given activity level propositions. This knowledge provides attendees with tools to handle hypothetical questions commonly asked in court, how to recognize poorly worded questions, and provide answers to these hypotheticals in a scientifically correct manner.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing guidance for real-world testimony on how to handle DNA testimony when the court’s interest is beyond that of an “inclusion” and its associated sub-source likelihood ratio.

Target Audience: Criminalistics, General, Jurisprudence

Knowledge Level Required: Intermediate

Chair:
Tim Kalafut, PhD
Associate Professor
Sam Houston State University
Department Forensic Science
Huntsville, TX

Co-Chair:
Michael Coble, PhD
Associate Professor/Executive Director
UNTHSC Center for Human Identification
Ft. Worth, TX

Presenter:
Simone Gittelson, PhD
Forensic Statistician/Lecturer
DC Department of Forensic Sciences
Washington, DC
# WORKSHOPS

**W13**  Beyond the “Who Done It . . .” DNA Interpretation Given Activity Level Propositions

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<th>Time</th>
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<td>8:30 AM – 8:45 AM</td>
<td>Opening Remarks</td>
<td>Tim Kalafut, PhD</td>
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<tr>
<td>8:45 AM – 10:00 AM</td>
<td>Great Expectations</td>
<td>Tim Kalafut, PhD</td>
</tr>
<tr>
<td>10:00 AM – 10:30 AM</td>
<td>Likelihood Ratios</td>
<td>Michael Coble, PhD</td>
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<tr>
<td>10:30 AM – 10:45 AM</td>
<td>Break</td>
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<tr>
<td>10:45 AM – 12:00 PM</td>
<td>ISFG Recommendations 2020</td>
<td>Simone Gittelson, PhD</td>
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<tr>
<td>12:00 PM – 12:30 PM</td>
<td>Introduction to Bayesian Networks</td>
<td>Simone Gittelson, PhD</td>
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<tr>
<td>12:30 PM – 13:00 PM</td>
<td>Break</td>
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<tr>
<td>1:30 PM – 2:00 PM</td>
<td>Introduction to Case Pre-Assessment Exercise</td>
<td>Michael Coble, PhD</td>
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<tr>
<td>2:00 PM – 3:15 PM</td>
<td>Case Pre-Assessment Exercise</td>
<td>All Presenters</td>
</tr>
<tr>
<td>3:15 PM – 3:30 PM</td>
<td>Break</td>
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<tr>
<td>3:30 PM – 5:00 PM</td>
<td>Court Testimony</td>
<td>Tim Kalafut, PhD; Michael Coble, PhD</td>
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<tr>
<td>5:00 PM – 5:30 PM</td>
<td>Questions and Answers/Closing Remarks</td>
<td>Michael Coble, PhD</td>
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</table>

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$225

W14 Applications of Digital Forensic Audio/Video for Real Life Challenges With DeepFake Video, Audio, and Artificial Intelligence

Tuesday, February 20, 2024  8:30 AM – 5:15 PM  CE Hours: 7.0

Program Description: Digital Multimedia Authentication seeks to determine the validity of digital multimedia containers and contents by investigating their format, structure, time, frequency, pixel and/or sample level features. This workshop will discuss the digital audio and video analysis process providing the user with methods of detecting and authenticating audio, including DeepVoice, and DeepFake videos. It will also demonstrate the incorporation of multiple tools and techniques into unified frameworks appropriate in forensic examinations where reducing examiner bias and error is crucial.

Educational Objectives: After attending this workshop, attendees will: (1) be familiar with the latest developments in forensic audio analysis and authentication; (2) understand criteria used for media authentication; and (3) understand how to conduct analysis within a forensic framework and (4) multiple frameworks to use for DeepFake video detection.

Impact on the Forensic Science Community: This workshop will impact the forensic community by: (1) explaining the scientific approach in forensic audio authentication; (2) demonstrating an authentication investigation framework; (3) discussing tools used to combat multimedia forgery; (4) showing multiple frameworks to use for DeepFake video detection.

Target Audience: Digital & Multimedia Sciences

Knowledge Level Required: Intermediate

Chair:
Catalin Grigoras, PhD
Director
National Center for Media Forensics
Denver, CO

Co-Chair:
Zeno J. Geradts, PhD
Senior Forensic Scientist
Chair Forensic Data Science
NFI / University of Amsterdam,
Den Haag, Zuid-Holland, NETHERLANDS

Presenter:
Cole Whitecotton, MS
Senior Professional Research Assistant
National Center for Media Forensics
Denver, CO

Program:

8:30 AM – 9:45 AM  Audio 1
Catalin Grigoras, PhD

9:45 AM – 10:15 AM  Questions and Answers/Discussion

10:15 AM – 10:30 AM  BREAK

10:30 AM – 11:45 AM  Audio 2
Catalin Grigoras, PhD

11:45 AM – 12:15 PM  Questions and Answers/Discussion

12:15 PM – 1:30 PM  BREAK

1:30 PM – 2:45 PM  Video 1
Zeno J. Geradts, PhD

2:45 PM – 3:15 PM  Questions and Answers/Discussion

3:15 PM – 3:30 PM  BREAK

3:30 PM – 4:45 PM  Video 2
Zeno J. Geradts, PhD

4:45 PM – 5:15 PM  Questions and Answers/Discussion

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**WORKSHOPS**

*Pre-Registration Required—$225*

**W15 To Tell the Truth: Perspectives on the Practice of Courtroom Testimony**

**Tuesday, February 20, 2024**

**8:30 AM – 4:30 PM**

**CE Hours: 6.0**

**Program Description:** This session is a multidisciplinary workshop focused on courtroom testimony. The sessions are geared for all levels of experience from novice to seasoned professional. While the speakers will focus on subjects that include training, preparation, cognitive bias, courtroom technology, and “high profile” cases, the sessions will explore criminal versus civil, deposition versus trial, state versus federal versus military, etc. Various perspectives from the different stakeholders involved are addressed—judge, prosecutor, defense, professional, and consultant.

**Educational Objectives:** Upon completion of this workshop, attendees will be better able to understand and perform one of the most challenging parts of any forensic practice—courtroom testimony in its many forms, be it civil or criminal, federal, military, or state, and deposition or trial.

**Impact on the Forensic Science Community:** This workshop will impact the forensic science community by providing a multidisciplinary look at the why and how of the practice of courtroom testimony, including recognizing potential challenges and pitfalls.

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

**Knowledge Level Required:** Intermediate

**Chair:**
 J.C.U. Downs, MD
Medicolegal Consultant
ForensX, LLC
Johns Island, SC

**Co-Chair:**
Gina Londino-Smolar, MS
Teaching Professor
Forensic & Investigative Sciences Program
Department of Chemistry & Chemical Biology
Indiana University–Purdue University Indianapolis
Indianapolis, IN

**Presenters:**
Craig Ackley, MS
Co-Founder & Head of Product Development/President
Compendia, Inc.
Forensic Case Solutions, Inc.
Nashville, TN

Tamela Adkins, JD
Superior Court Judge
Gwinnett County Georgia
Lawrenceville, GA

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

Marc A. LeBeau, PhD
Senior Forensic Scientist
FBI Laboratory
Quantico, VA

Michelle Medina, JD
Managing Partner
The Baez Law Firm
Miami, FL

Kenneth E. Melson, JD
Professorial Lecturer at Law
The George Washington University
Kinsale, VA
WORKSHOPS

W15 To Tell the Truth: Perspectives on the Practice of Courtroom Testimony

Program:

8:30 AM – 8:40 AM Welcome and Introduction
Gina Londino-Smolar, MS; J.C.U. Downs, MD

8:40 AM – 9:30 AM Perspectives: Judges
Tamela Adkins, JD

9:30 AM – 10:15 AM Perspectives: Prosecutors
Kenneth E. Melson, JD

10:15 AM – 10:30 AM BREAK

10:30 AM – 11:15 AM Perspectives: Defense Attorneys
Michelle Medina, JD

11:15 AM – 11:45 AM Questions and Answers Panel
Tamela Adkins, JD; Kenneth E. Melson, JD; Michelle Medina, JD

11:45 AM – 1:00 PM BREAK

1:00 PM – 1:45 PM Perspectives: Crime Scene Analysis
Craig Ackley, MS

1:45 PM – 2:30 PM Perspectives: Forensic Scientists
Marc A. LeBeau, PhD

2:30 PM – 2:45 PM BREAK

2:45 PM – 3:30 PM Perspectives: Forensic Pathologists
James L. Caruso, MD

3:30 PM – 4:15 PM Questions and Answers Panel
Craig Ackley, MS; Marc A. LeBeau, PhD; James L. Caruso, MD

4:15 PM – 4:30 PM Closing
J.C.U. Downs, MD; Gina Londino-Smolar, MS

Proceeds from this workshop will benefit the Forensic Sciences Foundation

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$225

W16  Statistics and Forensic Science: From Probability to Black Box Studies to Likelihood Ratios

Tuesday, February 20, 2024  8:30 AM – 4:30 PM  CE Hours: 5.75

Program Description: This workshop provides an introduction to key concepts in probability and statistics for forensic practitioners by linking them to key topics that are currently impacting the forensic community. The target audience is anyone from the forensic science community (practitioners, lawyers, judges, advocates) with a desire to better understand ongoing conversations about error rates, black box studies, inconclusive findings, and likelihood ratios.

Educational Objectives: Participants will: (1) become familiar with the language and key concepts of probability including the role of populations and sample, laws of probability, dependence/independence of events, conditional probability and Bayes’ rule, and the likelihood ratio; (2) become familiar with the language and key concepts of statistical inference including the role of data collection, measurement, error rates, reliability, and validity; (3) understand issues associated with the design, execution, and interpretation of black box studies; (4) understand statistical hypothesis testing and its relevance for the two-stage approach for analyzing forensic evidence; and (5) understand the likelihood ratio / Bayes factor approach to assessing forensic evidence along with its strengths and weaknesses.

Impact on the Forensic Science Community: Understanding the applications of statistics by the forensic science community will assist practitioners, attorneys, and jurists in evaluating evidence and opinions. The workshop is intended to leave attendees in a position to better understand and engage in ongoing discussions (in the OSAC and other places) about appropriate approaches to assessing forensic evidence and reporting forensic conclusions.

Target Audience: All Disciplines

Knowledge Level Required: Basic

Chair: Linton Mohammed, PhD
Forensic Document Examiner
Forensic Science Consultants, Inc
Poway, CA

Co-Chair: James Green, BS
Forensic Document Examiner
Eugene, OR

Presenters: Michael J. Salyards, PhD, MFS
Principal Analyst
Compass Scientific Consulting LLC
Tucson, AZ

Hal S. Stern, PhD
Chancellor’s Professor of Statistics
University of California, Irvine
Irvine, CA

Program:

8:30 AM – 10:00 AM  Introduction and Probability Concepts
Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS

10:00 AM – 10:30 AM  BREAK

10:30 AM – 12:00 PM  Forensic Conclusions and Expert Opinions/Black Box Studies
Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS

12:00 PM – 1:00 PM  BREAK

1:00 PM – 2:30 PM  Statistical Methods and the Two-Stage Approach to Forensic Inference
Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS

2:30 PM – 3:00 PM  BREAK

3:00 PM – 4:30 PM  The Likelihood Ratio in Forensic Science
Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS

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WORKSHOPS

Pre-Registration Required—$225

W17  Crime Scene Reconstruction: Using Critical Thinking, Logic, and Reflection

Tuesday, February 20, 2024  8:30 AM – 5:30 PM  CE Hours: 5.75

Program Description: This workshop is applicable to all forensic science disciplines and will begin with an overview of forensic reconstruction in a broad sense, followed by detailed information on how people process information to come to a conclusion, and culminating with a hands-on practical exercise involving all attendees who will implement the concepts studied and presented. During the presentation, attendees will be instructed on the background of reconstruction and how, by using a multidisciplinary systematic method of inquiry to problem-solving, they will be more likely to come to a logical and factual outcome.

Educational Objectives: This workshop will assist attendees in understanding and implementing the scientific method of inquiry to criminal investigations and forensic science problems by the use of physical evidence, objective data/information, artifacts of affect, and methods/processes of reasoning, logic, and cognitive learning within the contextual bounds of where this data/information is located, to derive knowledge regarding a particular incident and, when possible, to provide a chronological sequence to the incident.

Impact on the Forensic Science Community: This workshop is critical to all forensic scientists, crime scene investigative personnel, detectives, pathologists, and attorneys charged with investigating violations of law. By understanding logic, critical thinking, and reasoning, the law enforcement and forensic professional will better understand how their own biases and/or lack of knowledge and understanding can impact their decision-making process that could lead to a flawed outcome or conclusion.

Target Audience: All Disciplines

Knowledge Level Required: Basic

Chair:
David Pauly, MFS
Professor of Forensic Science/Sirchie Instructor
Methodist University
New London, NC

Co-Chair:
Steve Downs, DBA
Professor/Program Director of Forensic Science
Methodist University
Fayetteville, NC

Presenters:
Bryan W. Brendley, PhD
Professor of Forensic Science
Methodist University
Greensboro, NC

Douglas Young
Sr. Criminalist/Sirchie Instructor
Thornton Police Department
Broomfield, CO

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WORKSHOPS

W17  Crime Scene Reconstruction: Using Critical Thinking, Logic, and Reflection

Program:

8:30 AM – 10:00 AM  What is Reconstruction?  
Douglas Young

10:00 AM – 10:15 AM  BREAK

10:15 AM – 11:30 AM  Requirements for Crime Scene Reconstruction  
Douglas Young; Steve Downs, DBA

11:30 AM – 1:00 PM  BREAK

1:00 PM – 2:15 PM  Foundational Pillars to Reconstruction  
Douglas Young

2:15 PM – 2:30 PM  BREAK

2:30 PM – 4:00 PM  Data Acquisition Thoughts/Questions/Organization  
Douglas Young; Bryan W. Brendley, PhD

4:00 PM – 4:15 PM  BREAK

4:15 PM – 5:30 PM  Practical Exercises Involving All Participants Regarding a Mock BPA and Projectile/Ballistics Reconstruction  
All Presenters

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$125

W18 Campus Shootings in America: Is There More We Can Do?

Tuesday, February 20, 2024  8:30 AM – 12:30 PM  CE Hours: 3.5

Program Description: This presentation will provide an overview of campus shootings in America and continue with legislative and legal updates through case analyses. This workshop will explore gender, mental illness, behavior, victimology, and weaponry.

Educational Objectives: Attendees will be able to assess their role in making positive and effective changes to policy, practice, and research within and among multiple disciplines. Attendees will have the opportunity to discuss their existing practices and brainstorm alternates throughout the presentation.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by reminding all attendees of their role in making positive and effective changes to eliminate campus shootings by focusing on our historical, during, and post-incident responses and using case analyses to encourage accountability and promote real-time collaborative research and practices within multiple disciplines.

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

Knowledge Level Required: Intermediate

Chair: Betsy Adelizzi, PhD
Missouri Southern State University
Joplin, MO

Co-Chair: Patricia Smith, MSL
Harris County District Attorney’s Office
Houston, TX

Presenters:
Travis Walthall, MS
Missouri Southern State University
Joplin, MO

Patricia Williams, MS, RN
Retired
Franklin, TN

Timothy Wilson, PhD
Missouri Southern State University
Joplin, MO

Program:

8:30 AM – 8:35 AM  Introductions
Patricia Williams, MS, RN

8:35 AM – 9:05 AM  A Case Study of the Umpqua Community College Shooting
Timothy Wilson, PhD

9:05 AM – 9:35 AM  Historical Perspective: High Schools vs. Colleges
Betsy Adelizzi, PhD

9:35 AM – 10:05 AM  Weaponry and Victimology: Injury Patterns
Travis Walthall, MS; Timothy Wilson, PhD

10:05 AM – 10:15 AM  Case Review
Timothy Wilson, PhD; Betsy Adelizzi, PhD

10:15 AM – 10:35 AM  BREAK

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WORKSHOPS

W18  Campus Shootings in America: Is There More We Can Do?

Program continued:

10:35 AM – 11:05 AM  Shooter Profiles, Mental Illness, Behaviors  
Betsy Adelizzi, PhD; Timothy Wilson, PhD

11:05 AM – 11:35 AM  Legal and Legislative Responses  
Patricia Smith, MSL

11:35 AM – 12:05 PM  Training and Response Times  
Travis Walthall, MS

12:05 PM – 12:15 PM  Case Review  
Betsy Adelizzi, PhD; Patricia Smith, MSL

12:15 PM – 12:30 PM  Questions and Answers  
All Presenters
WORKSHOPS

Pre-Registration Required—$125

W19   Forensic Scientists on the Front Lines

Tuesday, February 20, 2024  8:30 AM – 12:30 PM  CE Hours: 3.75

Program Description: After attending this workshop, attendees will be able to discuss examples of teamwork approaches that place forensic scientists on the front lines, addressing the challenges associated with the growing number of emerging drug substances and precursors, the complexity of the analysis, and the impact on enforcement and intelligence investigations.

Educational objectives: After attending this workshop, attendees will be able to: (1) describe how forensic techniques can be used beyond simply reporting the presence of controlled substances to provide insights into changes in drug manufacturing and distribution practices; (2) evaluate the differences in analytical capabilities and workflow strategies provided in central laboratories versus front line laboratories; and (3) to explain how forensic analysis impacts intelligence gathering to support investigations, health, and safety.

Impact on the Forensic Science Community: This workshop will benefit the forensic science community by highlighting the impacts of forensic science collaborations on investigations, epidemiology, drug intelligence, public health, and canine training and operations. It will also highlight how deployment of laboratories on the front lines strengthen the efficiency of these operations, utility of the results, and timeliness of testing.

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

Knowledge Level Required: Basic

Chair: Agnes D. Winokur, MS
Laboratory Director
DEA
Miami, FL

Co-Chair: Barry K. Logan, PhD
Executive Director
CFSRE
Horsham, PA

Presenters:
Larry D. Fluty
Assistant Commissioner
U.S. Customs & Border Protection
Montgomery, TX

Sandra S. Ferreira, MSc
Canada Border Services Agency
Ottawa, Ontario CANADA

Alex J. Krotulski, PhD
Associate Director
CFSRE
Abington, PA

Chad Maheux, MSc, MA
Nepean, Ontario, CANADA

Jonathan McGrath, PhD, MSFS
Principal Technical Advisor
U.S. Customs and Border Protection
Houston, TX

Scott R. Oulton, BS
Deputy Assistant Administrator
Drug Enforcement Administration
Springfield, VA

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## WORKSHOPS

### W19  Forensic Scientists on the Front Lines

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<td>8:30 AM – 8:45 AM</td>
<td>Introduction and AAFS Opioids and Emerging Drugs Committee Updates</td>
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<td><em>Agnes D. Winokur, MS</em></td>
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<tr>
<td>8:45 AM – 9:15 AM</td>
<td>Scientists at the Frontline: Canadian Border Approach to Narcotics Detection</td>
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<td><em>Chad Maheux, MSc, MA; Sandra S. Ferreira, MSc</em></td>
</tr>
<tr>
<td>9:15 AM – 9:45 AM</td>
<td>National Intelligence: Fentanyl and Its Precursors and Adulterants</td>
</tr>
<tr>
<td>9:45 AM – 10:15 AM</td>
<td>Rapid Results at the Border: The CBP LSS Forward Operating Labs (FOLs) Program</td>
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<tr>
<td></td>
<td><em>Larry D. Fluty</em></td>
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<tr>
<td>10:15 AM – 10:30 AM</td>
<td>BREAK</td>
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<tr>
<td>10:30 AM – 11:00 AM</td>
<td>Public Health’s Response to the Overdose Crisis Using Front-Line Harm Reduction Initiatives to Gather Real-Time Intelligence</td>
</tr>
<tr>
<td></td>
<td><em>Alex J. Krotulski, PhD</em></td>
</tr>
<tr>
<td>11:00 AM – 11:30 AM</td>
<td>Analytical Scheme for the Characterization of Fentanyl Seizures From the United States Southwest Border</td>
</tr>
<tr>
<td></td>
<td><em>Sarah A. Shuda, MSFS</em></td>
</tr>
<tr>
<td>11:30 AM – 12:00 PM</td>
<td>Joint Intelligence National Threat Response (INTREPID)</td>
</tr>
<tr>
<td></td>
<td><em>Scott R. Oulton, BS</em></td>
</tr>
<tr>
<td>12:00 PM – 12:20 PM</td>
<td>K-9 Drug Detection: How Forensic Scientists Can Strengthen Detector Dog Training and Operations</td>
</tr>
<tr>
<td></td>
<td><em>Jonathan G. McGrath, PhD, MSFS</em></td>
</tr>
<tr>
<td>12:20 PM – 12:30 PM</td>
<td>Questions and Answers</td>
</tr>
<tr>
<td></td>
<td><em>All Presenters</em></td>
</tr>
</tbody>
</table>

All times are in the U.S. Mountain Time Zone.
WORKSHOPS

Pre-Registration Required—$125

W20 Moving Toward High Reliability in Forensic Science

Tuesday, February 20, 2024  8:30 AM – 12:00 PM  CE Hours: 3.0

Program Description: Socio-technical systems are made up of humans interacting with technology within the confines of an organizational culture. Forensic practice is socio-technical because it involves all these elements. Attendees will learn to see, understand, and manage risk in each of these elements to increase their overall organizational reliability and how to take steps to make their operations resilient.

Educational Objectives: Attendees will learn to see, understand, and manage risk in within their operations.

Impact on the Forensic Science Community: The work product of forensic providers is critical to the Criminal Justice System. While there have been advances in overall quality over the years, forensic providers still find themselves reacting to adverse incidents as they become front-page headlines. Attendees will learn proactive approaches that will prevent adverse events from occurring and mechanisms that can be put in place to quickly recover from these incidents if they do occur.

Target Audience: All Disciplines

Knowledge Level Required: Basic

Chair:  
Brian J. Gestring, MS  
Consultant  
4n6services  
Guilderland, NY

Co-Chair:  
Laura C. Fulginiti, PhD  
Forensic Anthropologist  
Maricopa County  
Office of the Medical Examiner  
Phoeniz, AZ

Presenter:  
K. Scott Griffith, MS  
Founding Partner  
SG Collaborative Solutions  
Roanoke, TX

Program:

8:30 AM – 9:00 AM  
Introduction  
Laura C. Fulginiti, PhD

9:00 AM – 9:45 AM  
Seeing and Understanding Risk  
K. Scott Griffith, MS

9:45 AM – 10:15 AM  
Risk in Forensic Practice  
Brian J. Gestring, MS

10:15 AM – 10:30 AM  
BREAK

10:30 AM – 11:15 AM  
Strategies for Organizational Reliability  
K. Scott Griffith, MS

11:15 AM – 11:35 AM  
Obstacles to Managing Risk and Building Resiliency in Forensic Practice  
Laura C. Fulginiti, PhD; Brian J. Gestring, MS

11:35 AM – 12:00 PM  
Moving Toward High Reliability in Your Operation  
All Presenters

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$125

W21  Investigation and Certification of Intoxication Deaths for the Non-Pathologist

Tuesday, February 20, 2024  1:00 PM – 4:30 PM  CE Hours: 3.25

Program Description: This workshop brings together experts in medicolegal death investigation, forensic pathology, and forensic toxicology to discuss the investigation and toxicological analysis when substance use is suspected, focusing on identifying and certifying these deaths. Common problems faced during the investigation, confounding or competing findings at autopsy, and pitfalls in postmortem toxicological testing and interpretation will be explored. To properly certify these deaths, experts will discuss the impact of information gained from the investigation of the circumstances, autopsy, and appropriate postmortem toxicological testing.

Educational Objectives: Attendees will be introduced to the essential components necessary for competent medicolegal death investigation and proper certification of suspected substance-related deaths. Experts from their respective fields will discuss death investigation, autopsy, and forensic toxicology. This program focuses on practical information that can be used by the non-pathologist and the pathologist-in-training to understand the necessary task of investigating and certifying these deaths. The importance of proper death certification for public health and safety purposes will be stressed.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing non-pathologists with practical information to help them understand the medicolegal investigative process, toxicological testing, and result interpretations to facilitate the recognition, investigation, and certification of drug intoxication deaths.

Target Audience: Criminalistics, Forensic Nursing Science, General, Jurisprudence, Pathology/Biology, Toxicology

Knowledge Level Required: Intermediate

Chair:
James R. Gill, MD
Forensic Pathologist
Office of the Chief Medical Examiner
Farmington, CT

Co-Chair:
Laura Labay, PhD
Director of Toxicological Services
NMS Labs
Langhorne, PA

Presenters:
Kelly Keyes, BS
Research Forensic Scientist
RTI International
Yorba Linda, CA

Candace H. Schoppe, MD
Deputy Medical Examiner
San Diego County Medical Examiner’s Office
San Diego, CA

Program:

1:00 PM – 1:05 PM  Opening Remarks and Introduction
James R. Gill, MD

1:05 PM – 1:45 PM  Investigation
Kelly Keyes, BS

1:45 PM – 2:30 PM  Autopsy
Candace H. Schoppe, MD

2:30 PM – 2:45 PM  BREAK

2:45 PM – 3:30 PM  Toxicology Testing
Laura Labay, PhD

3:30 PM – 4:15 PM  Interpretation and Certification
James R. Gill, MD

4:15 AM – 4:30 PM  Closing Remarks and Questions
Laura Labay, PhD

All times are in the U.S. Mountain Time Zone
WORKSHOPS

Pre-Registration Required—$125

W22 How Should Forensic Genetic Genealogy (FGG) Navigate the Court System? A Mock Cross Examination

Tuesday, February 20, 2024  1:00 PM – 5:00 PM  CE Hours: 3.75

Program Description: This workshop provides insight into the technical and legal challenges that may arise during cross examination, in the context of challenges the community faces if FGG should move further into the court system.

Educational Objectives: By attending this workshop, attendees will gain a perspective on important issues related to the introduction of FGG in court, from both the prosecution and defense points of view. The mock trial and subsequent discussion will also provide FGG practitioners with insight into how to present expert testimony.

Impact on the Forensic Science Community: This presentation will impact the forensic science community through a demonstration of the cross examination of a qualified, competent FGG expert witness, to show in real time various technical and legal challenges that may arise in court as FGG moves further into the judicial system.

Target Audience: Criminalistics, General, Jurisprudence

Knowledge Level Required: Basic

Chair:
Colleen M. Fitzpatrick, PhD
President
Identifinders International LLC
Fountain Valley, CA

Co-Chair:
Karra Porter
Chief Executive Officer
Intermountain Forensics
Salt Lake City, UT

Presenters:
Mike Coble, PhD
Associate Professor/Executive Director
University of North Texas Health Science Center
Ft. Worth, TX

Mitch Morrissey, JD
Chief of Operations
United Data Connect
Lakewood, CO

Program:

1:00 PM – 1:15 PM  Welcome, Introductions, Discussion of Mock Trial
Colleen Fitzpatrick, PhD

1:15 PM – 1:45 PM  Expert Witness Testimony and the Judicial Environment
Mike Coble, PhD

1:45 PM – 2:00 PM  Introduction to Mock Trial Case
Karra Porter; Mitch Morrissey, JD

2:00 PM – 3:15 PM  Mock Trial With Real Time Prosecution and Defense Analyses: Expert Witness Credentials; Information Obtained From Law Enforcement; Controversies Involving Forensic Practitioners
Colleen Fitzpatrick, PhD; Mitch Morrissey, JD; Karra Porter

3:15 PM – 3:30 PM  BREAK

3:30 PM – 4:45 PM  Mock Trial With Real Time Prosecution and Defense Analyses: Bias For or Against Law Enforcement; Statistics, Including Ascertainment Bias and Racial Disparities; The Use of Unaccredited Labs and Bioinformatics Methods
Colleen Fitzpatrick, PhD; Mitch Morrissey, JD; Karra Porter

4:45 PM – 5:00 PM  Closing Remarks and Discussion
All Presenters
WORKSHOPS

Pre-Registration Required—$125

W23 The Impact of Burning on Skeletal and DNA Evidence

Tuesday, February 20, 2024  1:00 PM – 4:30 PM  CE Hours: 3.25

Program Description: After attending this workshop, attendees will have learned how fire affects bodies and the ability of researchers and forensic practitioners to obtain skeletal and DNA evidence. The presenters will provide an overview of how bodies burn from case examples as well as experimental burning of complete human bodies and will discuss the classifications used to describe the extent of burning (i.e., the temperatures reached) in bone by previous researchers. Attendees will also learn about DNA extraction methods that have been applied to burned tissue and bone. The presenters will discuss the success of these methods based on data from research projects examining the effects of burning on skeletal remains and on the recovery of DNA from those remains. Attendees will learn how the DNA recovered from these burned remains performs in subsequent Combined DNA Index System (CODIS) Short Tandem Repeat (STR) and Next Generation Sequencing (NGS) analyses that aim to test the limits of DNA recovery from fire-death victims. This workshop probes the methods (and challenges) for obtaining DNA using novel ancient genomic technologies optimized for maximum ultra-short molecular recovery, as well as for obtaining skeletal evidence, including evidence for trauma, from burned human remains.

Educational Objectives: After attending this workshop, attendees should be able to: (1) describe methods used to characterize the extent of burning in bone; (2) understand the effects of burning on bodies, (3) appreciate the different extraction methods applied to burned and highly degraded skeletal tissues, and (4) evaluate which downstream analyses are likely to produce useful data for case identification.

Impact on the Forensic Science Community: The recovery and analysis of skeletal evidence and DNA from burned human remains represent some of the most challenging cases in medicolegal investigations. This workshop will impact the forensic science community by increasing attendees’ understanding of how burning affects the body and DNA preservation. Specifically, attendees will understand the characteristics used to score the level of burning in bones and the protocols used for optimal recovery of DNA from burned bone and tissue.

Target Audience: Anthropology, Criminalistics

Knowledge Level Required: Basic

Chair: Jane E. Buikstra, PhD
Professor
Arizona State University
Tempe, AZ

Co-Chair: Katelyn L. Bolhofner, PhD
Assistant Professor
Forensic Anthropology
Arizona State University
Glendale, AZ

Presenters: Joanne Devlin, PhD
Associate Director
Forensic Anthropology Center
University of Tennessee
Knoxville, TN

Laura C. Fulginiti, PhD
Forensic Anthropologist
Maricopa County
Office of the Medical Examiner
Phoenix, AZ

Cody E. Parker, MS
Post Doctoral Research Associate
School of Human Evolution and Social Change
Arizona State University
Gilbert, AZ

Erin M. Rawls, MS
Graduate Research Assistant
Arizona State University
Tempe, AZ

Anne Stone, PhD
Professor
Arizona State University
Tempe, AZ

Giovanna Vidoli, PhD
Research Associate Professor
Forensic Anthropology Center
University of Tennessee, Knoxville, TN
## WORKSHOPS

### W23  The Impact of Burning on Skeletal and DNA Evidence

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>1:00 PM</td>
<td>Introduction and Background About Workshop</td>
<td>Anne Stone, PhD</td>
</tr>
<tr>
<td>1:15 PM</td>
<td>Burn Characteristics and Scoring in Forensic Contexts</td>
<td>Katelyn L. Bolhofner, PhD; Laura C. Fulginiti, PhD; Jane E. Buikstra, PhD</td>
</tr>
<tr>
<td>1:45 PM</td>
<td>Observations From Experimental Burning</td>
<td>Giovanna Vidoli, PhD; Joanne Devlin, PhD</td>
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<tr>
<td>2:30 PM</td>
<td>BREAK</td>
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<tr>
<td>2:45 PM</td>
<td>Comparisons of Different DNA Extraction Methods for Burned Remains (Bone and Tissue)</td>
<td>Cody E. Parker, PhD</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Application of STR and NGS Analyses to DNA Obtained From Burned Remains</td>
<td>Erin M. Rawls, MS; Cody E. Parker, PhD</td>
</tr>
<tr>
<td>4:15 PM</td>
<td>Wrap-Up and Implications for the Forensic Community</td>
<td>Laura C. Fulginiti, PhD</td>
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NATIONAL INSTITUTE OF JUSTICE

Forensic Science Research and Development Symposium

The National Institute of Justice (NIJ) Forensic Science Research and Development (R&D) Symposium is an open meeting delivered through NIJ’s Forensic Technology Center of Excellence (FTCOE) where attendees can learn about NIJ-funded research across a variety of forensic science areas. You can register to attend the Symposium in person or virtually; however, American Academy of Forensic Sciences (AAFS) conference registration is not necessary to attend. Feel free to stop by to listen to specific presentations and view posters or stay all day and learn about the diverse NIJ forensic science R&D portfolio.

More details and registration information can be found here:
https://forensiccoe.org/event-2024-research-development-symposium/

Tentative Agenda—Tuesday, February 20, 2024

The podium presentations will take place from 8:30 AM MST to 5:00 PM MST in Meeting Rooms 205/207 at the Colorado Convention Center. A Q&A session for each presenter will directly follow their presentation. Please note that all times are listed in Mountain Standard Time (MST, UTC-7).

8:30 AM – 8:40 AM  Welcome and Opening Remarks
Lucas Zarwell, Office of Investigative and Forensic Sciences, National Institute of Justice

Session I – Physics and Pattern Interpretation/Trace Evidence
Moderated by NIJ Program Manager, Gregory Dutton

8:40 AM – 9:05 AM  Development of Nationwide Reference Population Distributions for Statistically Supported and Objective Testimony in Firearm Evidence Comparisons
Xiaoyu Alan Zheng, National Institute of Standards and Technology

9:05 AM – 9:30 AM  Assessing the Strength of Trace Evidence Fracture Fits Through a Comprehensive, Systematic, and Quantifiable Approach
Tatiana Trejos, West Virginia University

Igor K. Lednev, University at Albany – State University of New York

9:55 AM – 10:20 AM  Gaining Insight into the Transfer and Persistence of Inorganic and Organic Gunshot Residues
Brittany Coats, University of Utah

10:20 AM – 10:35 AM  BREAK

Session II – Forensic Anthropology and Forensic Pathology
Moderated by NIJ Program Manager, Danielle McLeod-Henning

10:35 AM – 11:00 AM  Pre-Grouping of Commingled Remains Using Field-Deployable Elemental Analysis
Matthieu Baudelet, University of Central Florida

11:00 AM – 11:25 AM  The Practicality of Postmortem Microbial Biomarkers in Death Investigation
Jennifer Pechal, Michigan State University

11:25 AM – 11:50 AM  Age- and Sex-Based Skull Thickness Distribution for Predicting Skull Fracture Patterns in Young Infants
Brittany Coats, University of Utah

All times are in the U.S. Mountain Time Zone
<table>
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<tr>
<th>Time</th>
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</table>
| 11:50 AM – 12:15 PM | Determining Fracture Timing from Histological Characteristics of Cortical Bone  
Jessica Skinner and Natalie Langley, Mayo Clinic Arizona |
| 12:15 PM – 1:25 PM | LUNCH BREAK – On Your Own                                                |
| 1:25 PM – 1:50 PM | Towards the Non-Contact Vapor Detection of Fentanyl in the Field         
Lauryn E. DeGreeff, Florida International University |
| 1:50 PM – 2:15 PM | Expert Algorithm for Substance Identification Applied to the Tandem Mass Spectra of Seized Drugs  
Glen Jackson, West Virginia University |
| 2:15 PM – 2:40 PM | Retinal Cannabinoids: Measures of Function and Impairment               
Denise Valenti, Impairment Measurement Marijuana and Driving (IMMAD) |
| 2:40 PM – 3:05 PM | Drug Positivity Rates in a Court-Ordered Mandatory Drug Testing Population  
Katherine Bollinger, RTI International |
| 3:05 PM – 3:20 PM | BREAK                                                                   |
| 3:20 PM – 3:45 PM | Unified Recovery of Nucleic Acids with Retention of Other Analytes from Trace and Degraded Samples  
Arati Iyengar, West Virginia University |
| 3:45 PM – 4:10 PM | STR Sequence Nomenclature Resources                                     
Katherine B. Gettings, National Institute of Standards and Technology |
Elisa Wurmbach, New York City Office of the Chief Medical Examiner |
| 4:35 PM – 5:00 PM | Comparative Assessment of Emerging Technologies for Body Fluid Identification  
Mirna S. Ghemrawi, Center for Forensic Science Research and Education |
National Institute of Justice

Poster Session

The poster presentations will be from 5:00pm MST to 6:30pm MST in Meeting Rooms 201/203 at the Colorado Convention Center. Self-guided tours will begin at 12:00pm MST, and the poster room doors will remain open until 7:00pm MST. For those who wish to access the posters virtually, more information can be found here:

https://forensiccoe.org/event-2024-research-development-symposium/

Fracture Mechanics Basis and Statistical Assessment of using Fracture Surface Topography for Matching of Forensic Evidence Fragments
Ashraf Bastawros, Iowa State University

Quality Assessment of Forensic Fracture-Surface Match Utilizing 3D Microscopy and Matric-Variate Gauge R&R
Ashraf Bastawros, Iowa State University

Evaluation of Mobile Technology for Detection of Inorganic and Organic Gunshot Residues in Firearms-Related Investigations
Kourtney Dalzell, West Virginia University

Assessing the Reliability of Modern μXRF Technology for Expanded Impact on the Forensic Examination and Interpretation of Trace Materials: Glass Evidence
Troy Ernst, West Virginia University

Elucidation of the Effect of Heat and Sun Exposures on Hair Colored by Permanent and Semi-Permanent Colorants Using Surface Enhanced Raman Spectroscopy (SERS)
Dmitry Kurouski, Texas A&M University

Assessing the Reliability of Modern μXRF Technology for Expanded Impact on the Forensic Examination and Interpretation of Trace Materials: Tape Evidence
Lacey Leatherland, West Virginia University

Enhancing Fire Pattern Analysis with Experiments on Architectural Finishes Impact and Developing Data-Driven Tools
Shuna Ni and Pengkun Liu, University of Maryland, College Park

Use of Tape Edge Particles Acquired Post-Manufacture to Discriminate Among Duct Tape Rolls and to Link Duct Tape Segments to Rolls
David A. Stoney, Stoney Forensic, Inc.

Accounting for Covariates in Forensic Error Rate Assessment and Evidence Interpretation
Larry Tang, University of Central Florida

Assessing the Utility of eDNA from Geologic Materials for Sample-to-Sample Comparisons and Study Site Separation
Teresa M. Tiedge, North Carolina State University

Recovering Blood Impressions and Semen Smears from Decedent Skin During the Early Stages of Decomposition
Jessica Zarate, Madonna University

Recovery and Analysis of Both Volatile and Less-Volatile Compounds from Ignitable Liquid Residues on Substrates/Debris by SPME-DART-MS
Mengliang Zhang, Middle Tennessee State University

GeoFOR: Applying Machine Learning to Improve Postmortem Interval Estimation
Madeline M. Atwell, Clemson University

Identifying Skeletal Trauma Distribution Patterns by Event Type: A Comparison Between Blast and Non-Blast Events with Similar Physical Etiologies
Petra Banks, Texas State University
NATIONAL INSTITUTE OF JUSTICE

Stature Estimation Equations for Modern American Indians in New Mexico and the American Southwest
Kelly Kamnikar, University of New Mexico

The Postmortem Microbiome Database Expansion and Validation for Indoor and Outdoor Medicolegal Death Investigation
Jessica Metcalf, Colorado State University

The Application of GPR and IR Imagery in the Search for the Missing in a South Texas Cemetery
Mariah E. Moe, Texas State University

Towards an “Eggs-perimental” Approach for Species Determination of Blow Fly Eggs to Facilitate Estimations of Post-mortem Interval
Rabi A. Musah, University at Albany – State University of New York

Analyzing Musculoskeletal Markers in Modern Populations to Explore Potential Applications in Forensic Analysis
Emilie L. Wiedenmeyer, Texas State University

The Development of a Delta9-THC Colorimetric Breathalyzer using 3D Printing Manufacture
Emanuele Alves, Virginia Commonwealth University

Data-Independent Forensic Toxicology Screening of Frequently Encountered Drugs of Abuse Using Liquid Chromatography-Quadrupole Time-of-Flight Mass Spectrometry
Maia Bates, University Of Wisconsin System

A Platform for Automated and Objective Laboratory Screening of Seized Drugs
Shannon T. Krauss, RTI International

Confirming the Presence of Novel Psychoactive Substances in Forensic Samples from Medicolegal Death Investigations
Alex J. Krotulski, Center for Forensic Science Research and Education

Developing an Approach to Standardize the Naming of Novel Psychoactive Substances (NPS)
Alex J. Krotulski, Center for Forensic Science Research and Education

Developing Reference Materials and Delivery Systems to Establish Ground Truth in Cannabis Breathalyzer Development
Tara M. Lovestead, National Institute of Standards and Technology

Application of Insights from High-level Density Functional Theory for the Differentiation of Marijuana and Hemp
Rabi A. Musah, University at Albany – State University of New York

Sample Preparation Procedures for Measuring THC and CBD in Cannabis Vape Cartridges
Walter Brent Wilson, National Institute of Standards and Technology

Decreased Accuracy of Forensic DNA Mixture Analysis for Groups with Lower Genetic Diversity
Maria Flores, San Francisco State University

Ped_slim—A Flexible Forward Genetic Simulator for Complex Family Pedigree Analysis
Miguel Guardado, San Francisco State University

Taking the Bait: Utilization of Probe-Capture Enrichment in Human Remains Identification
Katherine McBroom, University of North Texas Health Science Center at Fort Worth

Optimizing the Analysis of DNA From Burned Bone Using Ancient DNA Techniques
Cody Parker, Arizona State University

Forensic Application of Phylogenetic Proteomics
Glendon Parker, University of California, Davis

Testing New Methods for Degraded DNA Recovery and Next-Generation Sequencing
Erin Rawls, Arizona State University

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Toxicology laboratories face many challenges, including the need to detect an ever-increasing number of substances at ever-decreasing concentrations. The Thermo Scientific™ Tox Explorer™ Collection allows the world's toxicology community to navigate with ease to solve complex analytical challenges and increase their laboratory's productivity.

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## ANTHROPOLOGY

### Wednesday

**Poster Session**

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<th>Presentation</th>
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<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A1</td>
<td>Increasing Access and Engagement at Academic Conferences: Comparing Modalities and Facilitating Interactions</td>
<td>Lisa Monetti, PhD, MSc*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A2</td>
<td>Assessing Opportunities for Forensic Casework Experience for Students Through Educational Programs and Internships</td>
<td>Katherine M. Lane, MA*; Stephanie Fuehr, MA; Kelly C. McGehee, MA; John J. Schultz, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A3</td>
<td>How Contextual Information and Consideration of the Type of Bones Present Influence Interpretations of Identifiability</td>
<td>Andrea Palmiotto, PhD*; Allysha P. Winburn, PhD; Christine M. Pink, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A4</td>
<td>Mapping Barriers to Entry of Spanish-Speaking Students of Forensic Anthropology: Diversity in Academic Opportunities at United States Hispanic-Serving Institutions</td>
<td>Patricia N. Morales Lorenzo, BS*; Samantha H. Blatt, PhD; Juliette Bedard, BA; Bailey Bates; Trace Miles</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A5</td>
<td>Using Cause of Death and Skeletal Indicators of Health and Stress to Understand Structural Inequality</td>
<td>Allyson M. Simon, MS*; Tempest D. Mellendorf, MS; Colleen M. Cheverko, PhD; Melissa A. Clark, PhD; Mark Hubbe, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A6</td>
<td>The Development of a Migrant Profile for Unidentified Human Remains Found Across Three Medicolegal Offices in Greece</td>
<td>Sophia Mavroudas, PhD*; Despoina E. Flouri, MD; Christina Karydi, MSc, BSc; Valeria M. Karakasi, MD; Konstantinos Moraitis, PhD; Pavlos Pavlidis, MD, PhD; Elena F. Kranoti, MD, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A7</td>
<td>The Development of a Multidisciplinary, Minimally Invasive Approach for the Forensic Examination of Skulls</td>
<td>Ayusha Dahal*; Dennis McNevin, PhD; Denise Donlon, BSc, PhD; Stewart Fallon, PhD; Jodie Ward</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A8</td>
<td>An Investigation Into the Facial Dimensions of a North Indian Population: Implications in Facial Identification</td>
<td>Ankita Guleria, MSc*; Kewal Krishan, PhD; Vishal Sharma, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A9</td>
<td>The Identification of Fragmented Cranial Remains Exhumed From a Site Adjoining the Ajnala Site: A Forensic Anthropological Case Report</td>
<td>Jagmahender Singh Sehrawat, PhD*; Niraj Rai, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A10</td>
<td>Forensic Investigations on a Skull Found Inside a Roman Villa in the City of Diamante, Italy</td>
<td>Elena Varotto, PhD; Francesco Maria Galassi; Saverio Gualtieri, MD; Lucia Tarda, MD; Matteo Antonio A. Sacco, MD*; Angelica Zibetti, MD; Umberto Rosini, MD; Alessandro Pasquale Tarallo, MD*; Vincenzo Maria Ritorto, MD; Maria Cristina Verrina, MD*; Luca Calanna, MD; Wandamaria Mazzuca*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A11</td>
<td>Skeletal Indicators of Down Syndrome: A Case Study in Forensic Anthropology</td>
<td>Theresa M. De Cree, MS, BA; Ivanna Robledo, MA*; Emily Brooks, MS</td>
</tr>
</tbody>
</table>

*Presenting Author
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A12</td>
<td>The Characteristics of a Vertebroplasty in Human Skeletal Remains</td>
<td>Nicholas V. Passalacqua, PhD; Rebecca L. George, PhD; Emma F. Taylor; Nuwan Perera; Erin Chapman, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A13</td>
<td>An Unusual Case of Human Remains Found in an Urban Aqueduct</td>
<td>Stephanie Torres, MS; Ellen Frican, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>A14</td>
<td>Understanding the Potential of Chemical Anthropology in Burned Human Remains</td>
<td>Calil I. Makhoul, MSc; Luis A.E. Batista de Carvalho; David Gonçalves, PhD; Eugenia Cunha, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>A15</td>
<td>Is It Scientifically Impossible to Burn Human Bodies to Ashes? Revisiting the 2014 Case of the 43 Missing Students From the Ayotzinapa Rural Teachers College in Guerrero, Mexico</td>
<td>Elayne J. Pope, PhD; Alison Galloway, PhD; Chelsey A. Juarez, PhD; James G. Quintiere, PhD; Riccardo Torres, AAS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A16</td>
<td>An Evaluation of Commingled Remains Using Computational Methods to Reconstruct Dental MNI Based on Dental Wear</td>
<td>Melanie Need, BSc; Xenia Paula Kyriakou, PhD; Tim Eckhardt, BSc</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A17</td>
<td>MNI, NIDS, Centroids: Additional Considerations for Individuating Commingled Remains Using Stable Isotope Ratios</td>
<td>Stephanie B. Hartley, MA; Lesley A. Chesson, MS; Gregory E. Berg, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A18</td>
<td>The Accuracy and Reliability of Visual Pair Matching Lower Limb Bones in a Commingled Skeletal Assemblage</td>
<td>Abigail K. Kindler, MA; Cortney N. Hulse, PhD; Carrie LeGarde, MA</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A19</td>
<td>Assessing the Impact of Opioid Use on Human Clavicles Through Clinical Computed Tomography (CT): A Pilot Study</td>
<td>Randi M. Depp, MS; Reed A. Davis, PhD; Evin Hessel, MS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A20</td>
<td>An Evaluation and Integration of Disparate Classification Schemes for Interparietal Bones in the Human Crania</td>
<td>Rhian R. Dunn, MS; Holly Long, MS; Melissa Clarkson, MDes, PhD; Joe T. Hefner, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A21</td>
<td>Is Bone Speed of Sound Affected by the Molecular Composition of Infant Bone?</td>
<td>Miriam E. Soto Martinez, PhD; Jason M. Wiersema, PhD; Christian Crowder, PhD; Angela Bachim, MD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A22</td>
<td>Laser Me This: Using Laser-induced Breakdown Spectroscopy to Detect Formalin in Human Remains</td>
<td>Morgan Montana Hogg, BS; Micki Besse, MS; Savanna Agilar, MS; Heather A. Walsh-Haney, PhD; Jay Radtke, MD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A23</td>
<td>An Application of Dietary Isotopes to Estimate Temporal Context of Unidentified Human Remains in British Columbia, Canada</td>
<td>Damon C. Tarrant, BA; Laura Yazdijian, MSc, BA; Michael Richards, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A24</td>
<td>How Low Can You Go? A Lower Bound Limit for δ15N Values From Human Bone Collagen</td>
<td>Amanda N. Friend, PhD; Claire Maass, PhD; Lesley A. Chesson, MS; Gregory E. Berg, PhD</td>
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<td>Session Time</td>
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<td>11:30 AM – 1:00 PM</td>
<td>A25</td>
<td>Taphonomic Effects on the C:N Ratio and δ¹³C and δ¹⁵N Isotopes in Bone Collagen</td>
<td>Nicole Long*; Ann H. Ross, PhD; Ethan Hyland</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A26</td>
<td>Using Forensic Anthropological Landmarks to Optimize DNA Extractions From Post-Cranial Remains</td>
<td>Keith Biddle, MA, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A27</td>
<td>Validation and Quality Control of 3D Coordinate Data From Human Crania for Forensic Casework</td>
<td>Amanda R. Hale, MA*; Rebecca J. Taylor, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A28</td>
<td>A Multivariate Analysis and Evaluation of Classification of Human Skeletal Vertebrae for an Applied Context</td>
<td>Jolen Anya Minetz, MA*; Stephen Ousley, PhD</td>
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**Thursday**

**Poster Session**

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<th>Poster Number</th>
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<th>Presenting Authors</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A29</td>
<td>Investigating Applications of Forensic Fractography of Bone Over the Postmortem Interval</td>
<td>Carter A. Unger, BS*; Mariyam I. Isa, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A30</td>
<td>Measuring Volatile Organic Compounds (VOCs) From Decomposing Human Tissue</td>
<td>Sheana S. Ramcharan, MS, BS*; Luis L. Cabo, MS; Jack D. Williams, PhD; Michael S. Foulk, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A31</td>
<td>Tracing PMI Through Bone Metabolomics With GC/MS and LC/MS/MS</td>
<td>Elisa Roggia, BS*; Luke William Gent, BSc, MRes; Andrea Bonicelli, PhD, MA; Noemi Procopio, PhD; Eugenio Alladio</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A32</td>
<td>Using Evidence of Microbial Modifications on Postmortem Bone Surfaces to Narrow Down Time Since Death Estimations</td>
<td>Caroline Rowe, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A33</td>
<td>The Megyesi Total Body Score Method: Inter-Observer Agreement and Sources of Bias</td>
<td>Tempest D. Mellendorf, MS*; Madeline R. Leggiero; Allyson M. Simon, MS; Varun V. Tewari, BS, BA; Luis L. Cabo, MS</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A34</td>
<td>Using Artificial Intelligence: Deep Learning for Human Decomposition Staging</td>
<td>Anna-Maria Nau, BA*; Phillip Ditto, BA*; Audris Mockus, PhD; Dawnie W. Steadman, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A35</td>
<td>Testing Decomposition Scoring Methods at FOREST in Cullowhee, North Carolina</td>
<td>Leilah Melerine*; Rebecca L. George, PhD; Nicholas V. Passalacqua, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A36</td>
<td>It’s a Dry Heat: Testing Existing Postmortem Interval (PMI) Equations in Clark County, Nevada</td>
<td>Dayanira Lopez, MS*; Claire Ralston, PhD; Jennifer F. Byrnes, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A37</td>
<td>Postmortem Interval in the Pacific Northwest—King County, Washington</td>
<td>Kiana C. Miller, BS*; Andrew C. Seidel, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A38</td>
<td>A Drop in the Bucket: An Analysis of Southwest Florida Weather Station Variables to Inform Postmortem Interval</td>
<td>Savanna Agilar, MS*; Micki Besse, MS; Heather A. Walsh-Haney, PhD</td>
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<th>Authors</th>
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| 11:30 AM – 1:00 PM | A39  | **Under the Weather: A Report of Faunal Scavenger Activity During Major Weather Systems Within a Taphonomic Facility in Southwest Florida**  
Micki Besse, MS*; Savanna Agilar, MS; Heather A. Walsh-Haney, PhD |
| 11:30 AM – 1:00 PM | A40  | **Exploring the Scavenging Behavior of Bobcats, Lynx Rufus, in the Middle Tennessee Area and Its Forensic Implications**  
Yangseung Jeong, PhD; Aaron Gatewood* |
| 11:30 AM – 1:00 PM | A41  | **A Longitudinal Observation of Pattern and Trajectory of Packrat Scavenging Among a Cohort of Human Donors**  
Christiane I. Baigent, MSc* |
| 11:30 AM – 1:00 PM | A42  | **Multiple Scavenging Agents: The Effect of Termite and Canine Scavenging on Forensic Cases in Northern Thailand**  
Sittiporn Ruengdit*; Sangob Sanit; Kwankamol Limsopatham |
| 11:30 AM – 1:00 PM | A43  | **Soft Tissue Scavenging Patterns of Mice on Human Remains**  
Alexander J. Smith, BA* |
| 11:30 AM – 1:00 PM | A44  | **Corpse Concealment by Use of a Foundry Furnace: An Experimental Study on a Swine Carcass**  
Matteo D’Angiolllo, MD*; Ilaria Grasso, MD; Alessandro Bonsignore, MD, PhD;  
Francesca Frigiolini, MD; Francesco Ventura, MD, PhD; Camilla Tettamanti, MD, PhD |
| 11:30 AM – 1:00 PM | A45  | **Determining Forensic Significance: Pilot Observations of the Taphonomic Patterning of Greek-Orthodox Cemetery Inhumations in Cyprus**  
Samantha Cohen, MRes, BA*; Xenia Paula Kyriakou, PhD |
| 11:30 AM – 1:00 PM | A46  | **The Resilience of Cut Mark Characteristics: An Experimental Study on the Effect of Corrosive Chemicals**  
Maisy Jordan, MSc*; Matteo Borrini, PhD, MS* |
| 11:30 AM – 1:00 PM | A47  | **The Resilience of Cut Mark Characteristics: An Experimental Study on the Effect of Fire Exposure**  
Katie Griffiths, BSc, MSc; Matteo Borrini, PhD, MS* |
| 11:30 AM – 1:00 PM | A48  | **In Full or in Part: The Effect of Incomplete Remains on Trauma Analysis**  
Hailey Scacciaferro, BS*; Savanna Agilar, MS; Micki Besse, MS; Heather A. Walsh-Haney, PhD |
| 11:30 AM – 1:00 PM | A49  | **A Case Presentation of Fractures to the Wrists and Hands in a Suicide and Homicide**  
Tuesday M. Frasier, MS*; Erin H. Kimmerle, PhD |
| 11:30 AM – 1:00 PM | A50  | **Tibia Size and the Contribution to Variance in Fracture Outcomes**  
Angela L. Harden, PhD*; Kyra Stull, PhD; Yun-Seok Kang, PhD; Amanda M. Agnew, PhD |
| 11:30 AM – 1:00 PM | A51  | **An Analysis of Lower Extremity Fracture Patterning in Fatal Motor Vehicle Collisions**  
Lillian S. Antonelli, BS*; Jered B. Cornelison, PhD; Christine M. Pink, PhD |
| 11:30 AM – 1:00 PM | A52  | **Establishing a Skeletal Atlas of Elder Abuse: An Examination of the Relationship Between Bone Density and Skeletal Fractures in Accidental Falls and Suspected Abuse**  
Emelia Jensen; Kaitlyn J. Fulp, MA; Jacob A. Harris, PhD; Jane E. Buikstra, PhD;  
Laura C. Fulginiti, PhD; Katelyn L. Bolhofner, PhD* |
| 11:30 AM – 1:00 PM | A53  | **Assessing Variability in Kerf Floor Shape Utilizing a Revised Set of Shape Categories**  
Meghan M. Gast, BS*; Alexis L. VanBbaarle, MS; Ann L. Braverman; Heather M. Garvin, PhD |

*Presenting Author
ANTHROPOLOGY

11:30 AM – 1:00 PM  A54  A Comparison of Fatal and Non-Fatal Postcranial Gunshot Wounds  
Sam W. Coberly, PhD*

11:30 AM – 1:00 PM  A55  The Patterning of Fracture Characteristics in Gunshot Wounds in Long Bones  
Alexandra Semma Tamayo, MSc*; Laure Spake, PhD

11:30 AM – 1:00 PM  A56  An Analysis of Bevel Angle in Gunshot Trauma to Long Bones  
Devin L. Adcox, MA*; Ashley Kendell, PhD; Eric J. Bartelink, PhD

11:30 AM – 1:00 PM  A57  A Comparison Between Full Metal Jacket and Hollow Point Projectile Effects on Bone  
Joe Adserias-Garriga*; Roberto Escudero-Izquierdo

11:30 AM – 1:00 PM  A58  Antemortem Trauma and Trauma Reporting in the Texas State Donated Skeletal Collection  
Theresa M. De Cree, MS, BA*; Emma M. Giacomello, MA; Katie Gerstner, MA; Elizabeth Moore, MA; Michelle D. Hamilton, PhD

Thursday—Session I

Achieving Justice for All: The Evolving Role of Forensic Anthropology

Moderator: Derek, Boyd, PhD  Co-Moderator: Gabriela Rios Santiago, MSc

8:30 AM – 8:45 AM  A59  Standards Development in Forensic Anthropology: Updates From the OSAC and ASB  
Eric J. Bartelink, PhD*; Julie M. Fleischman, PhD; Wendy E.P. McQuade, PhD

8:45 AM – 9:00 AM  A60  Assessing the Place and Feasibility of Activism and Advocacy in Forensic Anthropology  
Sadie R. Friend, BS*

9:00 AM – 9:15 AM  A61  ForensicAnthroTok: The Depiction of Forensic Anthropology on TikTok  
Donovan M. Adams, PhD*; C M. Trent, MA; Jasper K. Sharpless, BA

9:15 AM – 9:30 AM  A62  Forensic Anthropology and Structural Vulnerability in Casework  
Jaymelee Kim, PhD*; Allysha P. Winburn, PhD

9:30 AM – 9:45 AM  A63  Justice for All Missing: The Mississippi Repository for Missing and Unidentified Persons  
Jesse R. Goliath, PhD*; Jordan Lynton Cox, PhD; Elise J. Adams, BA

9:45 AM – 10:00 AM  A64  The Cold Case Initiative: Bringing Cases Up to Current Investigative Standards  
Erin H. Kimmerle, PhD*

10:00 AM – 10:15 AM  A65  The East Marshall Street Well Project: Community-Driven Research to Restore Identity and Dignity  
Tal Simmons, PhD*

Juliette Bedard, BA*; Samantha H. Blatt, PhD; Patricia N. Morales Lorenzo, BS; Jake R. Shields, MS, BS; Trace Miles; Bailey Bates

10:30 AM – 10:45 AM  BREAK

*Presenting Author
# ANTHROPOLOGY

## Personal Identification Through Imaging and Radiography

**Moderator:** Kathryn Baustian, PhD  
**Co-Moderator:** Jordan Roberson, BS

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<tr>
<td>10:45 AM – 11:00 AM</td>
<td>A67</td>
<td><strong>The Validity of Radiographic Comparisons: Preliminary Findings by Body Region</strong></td>
<td>Jennifer F. Byrnes, PhD*; Timothy P. Gocha, PhD; Alan Farahani; Amanda Dolan; Taylor M. Flaherty, MSc; Emma M. Giacomello, MA; Tessa M. Herbert, BS; SaMoura Horsley, BA; Mariah E. Roe, BS, MA; Thomas J. Monticello; James R. Sernas</td>
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<tr>
<td>11:00 AM – 11:15 AM</td>
<td>A68</td>
<td><strong>A Part-to-Part Comparative Analysis to Assess Intra-Individual Similarity and Inter-Level Distinctions for Personal Identification</strong></td>
<td>Summer J. Decker, PhD*; Daniel W. Martin, MD; Zackery Beauchamp, MD; Guy Rutty, MBE; Jonathan M. Ford, PhD, LLM</td>
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<tr>
<td>11:15 AM – 11:30 AM</td>
<td>A69</td>
<td><strong>Automated Frontal Chest Radiography Using Deep Neural Networks</strong></td>
<td>Carolyn V. Isaac, PhD*; Redwan Sony, MSc; Clara J. Devota, BS, MA; Alexis L. VanBaarle, MS; Todd Fenton, PhD, MA; Joe T. Hefner, PhD; Arun Ross, PhD</td>
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<tr>
<td>11:30 AM – 11:45 AM</td>
<td>A70</td>
<td><strong>Visual Comparisons of Frontal Sinus Radiographs: Documenting Accuracy and Exploring the Effects of Experience</strong></td>
<td>Heather M. Garvin, PhD*; Jessica L. Campbell, PhD; Lauren Butaric, PhD</td>
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<tr>
<td>11:45 AM – 12:00 PM</td>
<td>A71</td>
<td><strong>Investigating Variation in Trabecular and Cortical Bone Structure Due to Mobility Impairment: A Natural Experiment in Reduced Loading</strong></td>
<td>Devora S. Gleiber, MA*</td>
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<td>12:00 PM – 1:15 PM</td>
<td>BREAK</td>
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## Advancements in Cranial Identification

**Moderator:** Ellen Fricano, PhD  
**Co-Moderator:** Kewal Krishan, PhD

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<tr>
<td>1:15 PM – 1:30 PM</td>
<td>A72</td>
<td><strong>Facial Photo-Anthropometry for the Exclusion of Candidates Under Non-Restrictive Photographic Conditions</strong></td>
<td>Oscar Ibáñez Panizo, PhD*; Pilar Navarro, BSc; Valentino Lugli, BSc; Andrea Valsecchi, PhD; María A. Guativonza; Verónica Martínez; Guillermo Ramírez; Rosario Guerra Martí; Inmaculada Alemán, PhD</td>
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<td>1:30 PM – 1:45 PM</td>
<td>A73</td>
<td><strong>Correlations of Facial Soft Tissue Thicknesses With Cranio metric Dimensions to Improve Craniofacial Identification Estimates: Fact or Fiction?</strong></td>
<td>Te Wai Pounamu Telena Hona, BBiomedSc*; Carl Stephan, PhD</td>
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<tr>
<td>1:45 PM – 2:00 PM</td>
<td>A74</td>
<td><strong>Facial Soft Tissue Thickness and the Positional Relationship of Hard and Soft Tissue in a United States Postmortem CT Sample, the New Mexico Decedent Image Database (NMDID)</strong></td>
<td>Rosario Guerra Martí*; María A. Guativonza; Verónica Martínez; Guillermo Ramírez; Oscar Ibáñez Panizo, PhD; Andrea Valsecchi, PhD; Enrique Bermejo, PhD; Alejandro Manzanares; Antonio David Villegas, MSc, BS; Fernando Navarro, PhD Inmaculada Alemán, PhD</td>
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<td>2:00 PM – 2:15 PM</td>
<td>A75</td>
<td><strong>The Latest Advancements in Craniofacial Superimposition Using Artificial Intelligence</strong></td>
<td>Oscar Ibáñez Panizo, PhD*; Praxedes Martínez, MSc; Pilar Navarro, BSc; Valentino Lugli, BSc; Andrea Valsecchi, PhD; Rosario Guerra Martí; María A. Guativonza; Verónica Martínez; Guillermo Ramírez; Pablo Mesejo Santiago, PhD; Sergio Damas, PhD</td>
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<td>2:15 PM – 2:30 PM</td>
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Reconsidering Sex Estimation Methods

Moderator: Carolyn Isaac, PhD  
Co-Moderator: Christopher Goden, MA

2:30 PM – 2:45 PM  A76  
Sex Estimation Methods in Forensic Anthropology: Current Practice and Trends  
Alexandra R. Klales, PhD*; Kate M. Lesciotto, JD, PhD

2:45 PM – 3:00 PM  A77  
A Test of the Applicability of Decision Trees for Sex Estimation Utilizing an Expanded Suite of Morphological Traits  
Morgan J. Ferrell, MA*; John J. Schultz, PhD; Donovan M. Adams, PhD

3:00 PM – 3:15 PM  A78  
An Exploration of the Subadult Pelvic Sex Estimation Method Using Pelvic Metrics and Geometric Morphometrics  
Leah E. Auchter, MA*; Kyra Stull, PhD; Heather M. Garvin, PhD

3:15 PM – 3:30 PM  A79  
Sex Estimation From Mandibular Morphometry Using a Discriminant Analysis–CT Scan-Based Retrospective Study  
Siddhartha Das, MBBS, MD*; Suthia VC, MBBS, MD; Vasanth Lenin, MBBS

3:30 PM – 3:45 PM  A80  
Increasing Transparency in Sex Estimation From the Skull by Monitoring Variation in Decision-Making Patterns  
Nicole Mantl, MSc, MPhil*; Sherry Nakhaeizadeh, PhD; Ruth M. Morgan, MA, DPhil

3:45 PM – 4:00 PM  A81  
Combining Metric and Morphological Traits for Sex Estimation: A Pilot Study Using the Innominate  
Kate M. Lesciotto, JD, PhD*; Alexandra R. Klales, PhD; Michael Price

4:00 PM – 4:15 PM  BREAK

Bone Chemistry and Isotopes

Moderator: Tiffany Saul, PhD  
Co-Moderator: Helen Brandt-Litavec, MS

4:15 PM – 4:30 PM  A82  
The Impact of Chemical Maceration on Elemental Concentrations and 87Sr/86Sr Values in Bone  
Julianne J. Sarancha, MS*; Gwyneth Gordon, PhD

4:30 PM – 4:45 PM  A83  
The Use of Multi-Isotopes for Geoprofiling Unidentified Decedents to Assist Law Enforcement Agencies in the United States  
Liotta N. Dowdy, BS, MA*; Gennifer M. Good, BA, MA; Anthony Menicucci, PhD; George Kamenov, PhD; Erin H. Kimmerle, PhD

4:45 PM – 5:00 PM  A84  
Origins and Isoscapes: A Reassessment of Oxygen and Strontium Isotopic Data for Human Identifications in North America  
Kirsten A. Verostick, PhD*; Chris Stantis; Alejandro Serna, PhD; Gabriel Bowen, PhD

5:00 PM – 5:15 PM  A85  
Isotopic Taphonomy: A Critical Review of the Effects of Diagenesis on Human Tissues Used for Stable Isotope Analysis  
Shelby Hard, BA*

5:15 PM – 5:30 PM  A86  
The Impacts of Chronic Opioid Exposure on Bone Biomechanical Parameters  
Sydney Q. Chizmeshya, BA*; Janna M. Andronowski, PhD
ANTHROPOLOGY

Thursday—Session II

The Right to the Truth I: Analysis of Commingled Remains for Conflict Resolution in Humanitarian Forensics

Moderator: Xenia Paula Kyriakou, PhD  
Co-Moderator: Julie Evo, MSFS

1:00 PM – 1:15 PM  
A87  
The Right to the Truth: A Multimodal Investigation of Mass Graves and an Analysis of Commingled Remains for Conflict Resolution in Humanitarian Forensics  
Xenia Paula Kyriakou, PhD*; Nicholas V. Passalacqua, PhD; Matthieu Baudelet, PhD

1:15 PM – 1:30 PM  
A88  
The Use of Computational Methods in Assessing Legacy Databases of Commingled Remains and Reconstructing Stratigraphic Relationships  
Chris Mavromatis, PhD*; Xenia Paula Kyriakou, PhD

1:30 PM – 1:45 PM  
A89  
A Case From “EL TUBO”: An Analysis of Commingled and Highly Fragmented Skeletal Remains Recovered From an Abandoned Water Exploration Well in Northeastern Mexico  
Nicole Lambacher*; Caterina Raffone; Benito Ramos-González; Sandra Sostaric; Francisco Etseberria Gabilondo

1:45 PM – 2:00 PM  
A90  
The Reassociation of Disparate Elements at a Human Decomposition Facility  
Rebecca L. George, PhD*; Reagan Baechle, BS; Autumn J. Hall

2:00 PM – 2:15 PM  
A91  
De-Commingling the Past—When an Attempt to Resolve Misidentifications Results in Setbacks: The Tihovici Case  
Sandra Sostaric*; Bojana Tomasevic; Samra Terzic; Almir Olovcic; Beisa Talic

2:15 PM – 2:30 PM  
A92  
Matching Antimeres: Prospects and Limitations of Statistical Methods for the Reassociation of Commingled Left and Right Humeri  
Erica Baer, PhD, MS*; Xenia Paula Kyriakou, PhD

2:30 PM – 2:45 PM  
A93  
The Chemical Reassociation of Commingled Remains Via Laser-Induced Breakdown Spectroscopy  
Kristen Livingston, BS*; Katie Zejdlik, PhD; Jonathan Bethard, PhD; Matthieu Baudelet, PhD

2:45 PM – 3:00 PM  
A94  
Don’t Forget About ME: How Material Evidence Can Inform (or Complicate) Commingling From the Battle of Tarawa  
Allison M. Campo, MA; Rylan Tegtmeyer Hawke, PhD*

3:00 PM – 3:15 PM  
BREAK

The Right to the Truth II: Multimodal Investigation of Mass Graves and Clandestine Burials

Moderator: Xenia Paula Kyriakou, PhD  
Co-Moderator: Julie Evo, MSFS

3:15 PM – 3:30 PM  
A95  
Preliminary Longitudinal GPR Data on an Experimental Secondary Mass Grave at the ARISTA Forensic Taphonomy Facility  
Coen Nienaber, MA, BA*; Xenia Paula Kyriakou, PhD

3:30 PM – 3:45 PM  
A96  
The Dirt on DNA: Utilizing Soil as Evidence of Clandestine Burials and Mass Graves  
Meradeth H. Snow, PhD*; Kaylee Hinds, MA; Atlantis Baron, BA

3:45 PM – 4:00 PM  
A97  
The Multidisciplinary Resolution of American Military Casualties From the Korean War  
Julie Evo, MS*; Veronica A. Keyes, MD; Matthew C. Go, PhD; Esther H. Choo, MS, BA; Paulina Dominguez Acosta, MA; Krystal Estrada, MSc; Amanda N. Friend, PhD; Amanda R. Hale, MA; Reshma Satish, MS; Melissa Menschel, MS

*Presenting Author
### Friday Poster Session

**11:30 AM – 1:00 PM**

**A100** Substance Misuse, Stress, and Sternal Rib End Morphology: Implications for Forensic Age Estimation  
Christine M. Pink, PhD*

**A101** Aging Increases Regional Variation in the Pore Morphometry of Human Ribs  
Mary E. Cole, PhD*; Yun-Seok Kang, PhD; Amanda M. Agnew, PhD

**A102** Testing a Novel Method for Estimating Adult Age at Death From the First Rib in Forensic Casework  
Amy Joy Spies, PhD*; Kaitlyn J. Fulp, MA; Laura C. Fulginiti, PhD

**A103** The Utility of Deciduous Dental Microstructures in Forensic Anthropology  
Marin Pilloud, PhD*; Christopher Aris, PhD; Emily Smith, MA

**A104** Dental Age Estimator Performance Relative to Weighted Kappa: A Simulation Study  
Valerie Sgheiza, MA, MS*; Helen M. Liversidge

**A105** Estimating Age in Adults Using Measurements of Dental Radiographs: A Validation of the Kvaal Method  
Katherine Skorpinski, MA*; Laura E. Cirillo, PhD

**A106** Innominate Weight Over the Lifespan: A Method for Estimating Age From the Pelvis  
Andrea M. Zurek-Ost, PhD*; Mark Sorensen, PhD

**A107** An Age-at-Death Estimation From Pubic Bone Mineral Density on Postmortem CTs  
Eulalie Pefferkorn*; Fabrice Dedouit, MD, PhD; Agathe Bascou, MD; Pauline Saint Martin, PhD; Norbert Telmon, MD, PhD; Frederic Savall, MD, PhD

**A108** Decoding Age-at-Death With DNA Methylation: A Cutting-Edge Approach for Forensic Analysis of Skeletal Remains  
Luke William Gent, BSc*; Noemi Procopio, PhD; Edward Schwalbe

**A109** Intra-Skeletal Variation in Lower Limb Microstructure for Histological Age Estimation  
Victoria M. Dominguez, PhD*; Bailey A.G. Colohan

**A109** Introducing OA-TA: A New Tool for Adult Age-at-Death Estimation Using Osteoarthritis of the Synovial Joints  
Michala K. Stock, PhD*; Ariana N. Strasheim, MA, BA; Allysha P. Winburn, PhD

*Presenting Author
# ANTHROPOLOGY

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<th>Time</th>
<th>Session</th>
<th>Title</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A111</td>
<td>Validating Population Affinity Method Platforms for Macromorphoscopic Traits in Specific 20th-Century Contexts</td>
<td>Courtney N. Hulse, PhD*; Amanda N. Friend, PhD; Amanda R. Hale, MA; Abigail K. Kindler, MA; Rebecca J. Taylor, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A112</td>
<td>A Comparison of Ancestry-Specific Versus Ancestry-Independent Stature Estimation</td>
<td>Rylan Tegtmeyer Hawke, PhD*; Laura E. Cirillo, PhD; Katie Whitmore, PhD; Lara E. McCormick, PhD; Abigail Kindler, MA; Emily S. Tarbet Hust, MA</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A113</td>
<td>Evaluating the Prevalence of Torus Mandibularis and Torus Palatinus in Relation to Ancestry, Sex, and Age in a Modern Skeletal Sample</td>
<td>Alex F. Wong, MS, BA*; Amandine Eriksen, PhD; Stephen Nawrocki, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A114</td>
<td>How Do Agencies Use Biological Profile Data? A Pilot Study Investigating Stakeholder Engagement With Forensic Anthropological Estimates</td>
<td>Samantha M. McCrane, PhD*; Allysha P. Winburn, PhD; Amanda N. Friend, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A115</td>
<td>Assessing the Reliability of the DSP2 Software for Skeletal Sex Assessment in a Modern Italian Reference Collection From Syracuse, Sicily</td>
<td>Henrietta Vita*; Constantine Eliopoulos, PhD; Matteo Borrini, PhD, MS*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A116</td>
<td>Sex Estimation of Modern Greek-Cypriots Utilizing Measurements of the Calcaneus and Talus</td>
<td>Anelis Diaz, MA, BS*; Georgia Hennessy*, Erica Baer, PhD, MS; Xenia Paula Kyriakou, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A117</td>
<td>Sexual Dimorphism in the Human Mandible: The Application of 3D Statistical Shape Modeling</td>
<td>Yu-Young Kim, MS*; Kang-Woo Lee, PhD; Kyung-Seok Hu, DDS, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A118</td>
<td>The Ontogenetic Development of the Preauricular Sulcus and Its Utility in Estimating Sex in Children and Young Adults With Considerations for Pregnancy and Parturition</td>
<td>Stephanie J. Cole, PhD*; Marin Pilloud, PhD; Kyra Stull, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A119</td>
<td>The Utility of the Maxillary Sinus in Estimating Biological Sex in a Modern American Population</td>
<td>Abigail Elaine Houkes, MA*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A120</td>
<td>Translating Results: Accessing Accuracy Within Sex Estimation Methods From the Biological Profile</td>
<td>McKenzie Macon, BAS*; Cris E. Hughes, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A121</td>
<td>Creating Continuity: The Proper Handling of Unprovenanced, and Unidentified, Legacy Forensic Cases and Prevention of Future Mishandling</td>
<td>Chelsey A. Juarez, PhD*; Alison Galloway, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A122</td>
<td>Identification Trends in Forensic Anthropology Cases at the New Mexico Office of the Medical Investigator</td>
<td>Nicollette S. Appel, MS*; Cris E. Hughes, PhD; Paige Lynch, MS</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A123</td>
<td>Forensic Anthropology Casework and Outreach: 50 Years of Operational Trends for Chico State’s Human Identification Laboratory</td>
<td>Colleen Milligan, PhD*; Eric J. Bartelink, PhD; Shannon Clinkinbeard, MA; Cheyenne D. Collins, MA; Ashley Kendell, PhD; Taylor Lambrigger, MA; P. Willey, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>A124</td>
<td>The Evolution of Forensic Anthropological Casework: Exemplifying the Importance of Routine Reanalysis of Long-Term Unidentified Remains at the Forensic Anthropology Center at Texas State (FACTS)</td>
<td>Emilie Wiedenmeyer, MA*; Theresa M. De Cree, MS, BA; Michelle D. Hamilton, PhD</td>
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11:30 AM – 1:00 PM A125  A Comparison of Forensic Anthropology Casework Across Two Urban, Midwest Medical Examiner Offices, 2013–2021
Erin B. Waxenbaum, PhD*; Lindsay H. Trammell, PhD; Anne Grauer, PhD

11:30 AM – 1:00 PM A126  Introducing the Forensic Science Research and Training Laboratory (FSRTL), a New Forensic Anthropology Research Facility at George Mason University
An-Di Yim, PhD*; Emily D. Rancourt, MS; Joseph A. DiZinno, DDS; Brian Eckenrode, PhD; Kimberly Rule, MS; Christopher Durac, MS, BS; Mary E. O’Toole, PhD, MA

11:30 AM – 1:00 PM A127  Stakeholder Perspectives and End-of-Life Planning: The Future for Body Farms, Donation Programs, and Student Development
Natalie S. Wise, BA*; Erin H. Kimmerle, PhD

11:30 AM – 1:00 PM A128  The Forensic Taphonomy Education and Research Facility: An Interdisciplinary Educational and Professional Resource
Sophia I. Reck, MA*; Ginesse A. Listi, PhD

11:30 AM – 1:00 PM A129  WITHDRAWN

Rexamining the Biological Profile

Moderator: Heather Walsh-Haney, PhD  Co-Moderator: Anthony Lanfranchi, MS

8:45 AM – 9:00 AM A130  Considerations for Age Estimation Accuracy: Method-Derived Outcomes and Practitioner Interpretations
Cris E. Hughes, PhD*; Chelsey A. Juarez, PhD; An-Di Yim, PhD

9:00 AM – 9:15 AM A131  A Regression-Based Machine Learning Framework for Adult Skeletal Age Estimation
Eugenia Cunha, PhD*; David Navega, PhD

9:15 AM – 9:30 AM A132  Cranial Masculinization: How Age Progression Affects the Accuracy of Sex Estimations in Adults
Lyndsey Hornagold*; Samantha Shipley, MS*; Erin H. Kimmerle, PhD

9:30 AM – 9:45 AM A133  Unaccompanied Minors Automatic Forensic Age Estimation (UMAFAE): Applying Artificial Intelligence-Based Methods to Estimate Legal Age in Undocumented Minors
Stefano De Luca*; Javier Venema Rodríguez, MSc; Pablo Mesejo Santiago, PhD; Oscar Ibáñez Panizo, PhD

9:45 AM – 10:00 AM A134  Macroscopic Differences in Adult Human Femora Are Linked to Body Mass Index
Daniel Wescott, PhD*; Elaine Y. Chu, MA; Adam D. Sylvester, PhD; Wojciech Zbijewski; Gengxin Shi; Lauren A. Meckel, PhD; Deborah L. Cunningham, PhD

10:00 AM – 10:15 AM A135  A Critical Validation of Dental Morphology as a Method of Ancestry Estimation in a Historical Forensic Context
Laura E. Cirillo, PhD*; Rylan Tegtmeyer Hawke, PhD; Rebecca J. Taylor, PhD

10:15 AM – 10:30 AM BREAK

*Presenting Author
ANTHROPOLOGY

PMI and Taphonomy

Moderator: Lauren Pharr Parks, PhD  
Co-Moderator: Micayla Spiros, MS

10:30 AM – 10:45 AM  A136  
. . . and There Were Only Teeth: Postmortem Interval Estimation Based on XRD and FTIR  
Sara C. Zapico, PhD*; Juan Suarez, PhD; Stella Martin de las Heras, MD, PhD; Leticia Rubio, MD, PhD

10:45 AM – 11:00 AM  A137  
geoFOR: A Forensic Taphonomy Database for PMI Estimation Using a Machine Learning Model  
Katherine E. Weisensee, PhD*; Madeline Atwell, PhD; Cristina I. Tica, PhD; Carl Ehrett, PhD, BS; Dane Smith, PhD; Patricia Carbajales-Dale, MS, Beng; Patrick J. Claflin; Noah A. Nisbet

11:00 AM – 11:15 AM  A138  
Skeletal Element Recovery Rates From Outdoor Surface Contexts in Louisiana  
Ginesse A. Listi, PhD*

11:15 AM – 11:30 AM  A139  
Small but Mighty: A Controlled Observation of Magpie Scavenging Among a Cohort of Human Remains in the Rocky Mountain Region of Colorado  
Christiane I. Baigent, MSc*

11:30 AM – 11:45 AM  A140  
WITHDRAWN

11:45 AM – 12:00 PM  A141  
The Fluvial Transport of Human Remains: Forensic Application of a HEC-RAS Model for Predicting Search Parameters for Human Remains Recovered From the Sacramento River, California  
Eric J. Bartelink, PhD*; Colleen Milligan, PhD; Steffen Mehl, PhD; Erik Fintel, BA

12:00 PM – 1:15 PM  BREAK

Trauma Assessment and Application

Moderator: Mari Isa, PhD  
Co-Moderator: Claire Eichen, BA

1:15 PM – 1:30 PM  A142  
Standards for Analyzing Skeletal Trauma in Forensic Anthropology  
Donna C. Boyd, PhD*; Julie M. Fleischman, PhD; Carolyn V. Isaac, PhD; Jade S. De La Paz, PhD

1:30 PM – 1:45 PM  A143  
The Use of Outline Analyses to Assess Kerf Floor Shape Patterns in Saw Marks  
Alexis L. VanBaarle, MS*

1:45 PM – 2:00 PM  A144  
Deep Learning Models for Fracture Detection and Segmentation in Bone Histology  
Carolyn V. Isaac, PhD*; Redwan Sony, MSc; Clara J. Devota, BS, MA; Alexis L. VanBaarle, MS; Arun Ross, PhD

2:00 PM – 2:15 PM  A145  
Unexpected Antemortem and Perimortem Rib Fractures in Infants Without Other Significant Injuries  
Erin Chapman, PhD*; Katherine Maloney, MD; Tara Mahar, MD

2:15 PM – 2:30 PM  A146  
Whole Body Fracture Patterns From Blunt Force Trauma Vary Within Similar Experimental Loading Events  
Amanda M. Agnew, PhD*; Angela L. Harden, PhD; Yun-Seok Kang, PhD; John H. Bolte, PhD, MSc

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<tr>
<td>2:30 PM – 2:45 PM</td>
<td>A147</td>
<td>Structural Violence in Orleans Parish, Louisiana: Implications for Forensic Anthropological Casework</td>
<td>Krista E. Bennett, MA*; Sophia I. Reck, MA; Ginesse A. Listi, PhD; Emily F. Michon, MA; Teresa V. Wilson, PhD</td>
</tr>
<tr>
<td>2:45 PM – 3:00 PM</td>
<td>A148</td>
<td>Skeletal Trauma in Suicide Cases (2017–2018) in Puerto Rico After Hurricane Maria</td>
<td>Gabriela I. Rios Santiago, MS*; Maria Teresa Ferreira, PhD; Sofia N. Wasterlain, PhD</td>
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<td>3:00 PM – 3:15 PM</td>
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<td>BREAK</td>
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<td><strong>Human Rights and Global Perspectives in Forensic Anthropology</strong></td>
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<td>Moderator: Amanda Williams, PhD</td>
<td>Co-Moderator: Dayanira Lopez, MS</td>
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<td>3:15 PM – 3:30 PM</td>
<td>A149</td>
<td>An Analysis and Reconstruction of Remains From a World War II Mass Grave in the Szpęgawski Forest, Poland</td>
<td>Joanna Wysocka, MSc*; Dawid Kobiałka, PhD</td>
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<tr>
<td>3:30 PM – 3:45 PM</td>
<td>A150</td>
<td>The Latin American Association of Forensic Anthropology (ALAF): 20 Years of Development</td>
<td>Luis Fondebrider, PhD*</td>
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<tr>
<td>3:45 PM – 4:00 PM</td>
<td>A151</td>
<td>Missing Persons in Argentina: The Age Progression Technique to Support Non-Profit Organizations in the Search for the Lost</td>
<td>Laura Donato*; Luigi Tonino Marsella; Marcela Lerda; Michele Treglia; Rossana Cecchi, MD</td>
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<tr>
<td>4:00 PM – 4:15 PM</td>
<td>A152</td>
<td>The Role of Forensic Anthropology in Long-Term Missing Persons Cases in Scotland</td>
<td>Catriona Davies, PhD, BSc*; Lucina Hackman, PhD; Helen Langstaff, PhD; Diana Swales, PhD</td>
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<td>4:15 PM – 4:30 PM</td>
<td>A153</td>
<td>FORDISC® and AncesTrees: Limitations and Considerations for the Identification of Individuals From Central and South America</td>
<td>Hannah G. Messersmith, BSc*; Julieta Gómez Garcia-Donas, JD, PhD</td>
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<td>4:30 PM – 4:45 PM</td>
<td>A154</td>
<td>The Forensic Border Coalition South Texas Cemetery Survey: Insights From a Forensic Science and Humanitarian Effort Addressing Unidentified Burials and Unidentified Remains</td>
<td>Kate Spradley, PhD*; Christine M. Kovic, PhD; Mercedes Doretti; Robin C. Reineke, PhD; Molly Miranker, PhD; Molly A. Kaplan, MA; Rachel Daniell, PhD</td>
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<tr>
<td>4:45 PM – 5:00 PM</td>
<td>A155</td>
<td>Shifting Routes: Expanding Migrant Decedent Identification Efforts in Texas</td>
<td>Molly A. Kaplan, MA*; Courtney C. Siegert, MA, PhD; Chloe P. McDaneld, MA; Ivanna Robledo, MA; Kate Spradley, PhD</td>
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<td>5:00 PM – 5:15 PM</td>
<td>A156</td>
<td>Necrosilence: GIS Visualizations of Migrant Mortality in South Texas, 2009–2020</td>
<td>Molly Miranker, PhD*; Alberto Giordano, PhD</td>
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CRIMINALISTICS

Wednesday

Poster Session

11:30 AM – 1:00 PM  B1  What’s In It For Me (WIIFM)?: Streamlining Sexual Assault Evidence From Collection to Analysis to Achieve the Best Outcome for the Survivor  
Fernanda Henry, BSc, MSc*; Joy Quinlan, BSc; Valerie Mattimore Fuller, PhD, BS; Aliker Compton, BSc

11:30 AM – 1:00 PM  B2  The Remains of the Crime: An Assessment of Body Fluid Identification Over Time  
Francisco Medina Paz, PhD; Brandon L. Kuba, BS; Emily Kryvorutsky; M. Gabriela Roca, MSc, PhD*; Sara C. Zapico, PhD

11:30 AM – 1:00 PM  B3  Dry Vacuum Recovery of DNA From Fabric  
Emily Sam-Zee-Moi, BS*; Mechthild Prinz, MS, PhD

11:30 AM – 1:00 PM  B4  An Initial Investigation of the Applied Biosystems® SeqStudio™ Genetic Analyzer for Human Identification Purposes  
Brayleigh Keefe, BS*; Megan Foley, MSFS; Nicole Novroski; Fabio Oldoni, PhD

11:30 AM – 1:00 PM  B5  A Morphological and Genetic Characterization of the Psychoactive Species Psilocybe Cubensis From Forensic Samples  
Ivana Horjan Zanki; Adela Makar, PhD; Andrea Ledić*

11:30 AM – 1:00 PM  B6  The Persistence of Wearer DNA on Clothing After Laundering  
Rachel Breitenstein, MS*; Shawn Montpetit, MS; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*

11:30 AM – 1:00 PM  B7  A Multi-Species Reference Ladder Using Two PCR Multiplexes for the Rapid Identification of Most Domestic Animals for Forensic Purposes  
Vallarie Ostenson, MS; Lindsey Kaufman, MS; DeEtta Mills, PhD*

11:30 AM – 1:00 PM  B8  Advancing Semen Detection Techniques With Sperm Tracker STK® in Real Case Scenarios and Diverse Environments  
Monica Omedei, PhD*; Selena Cisano, PhD; Aurora Desogus; Giorgia Ferrero; Florian Tharin; Paolo Garofano, PhD; Eugenio Alladio

11:30 AM – 1:00 PM  B9  Into the “Sexome”: Genital Microbiome Transfer and Applications  
Julia Wang, BS, MS*; Rachel Houston, PhD; Sheree R. Hughes, BSc, PhD; Brendan Chapman; Ruby Dixon, BS

11:30 AM – 1:00 PM  B10  The Adaptation, Optimization, and Validation of a Semi-Automated DNase I-Based Differential Extraction Procedure on the Beckman Coulter Biomek NX® Automation Workstation  
Susan A. Greenspoon, PhD*; William Eggleston, PhD; Cathryn Shannon, BS, MS

11:30 AM – 1:00 PM  B11  From Tecan to Hamilton: Material Modification of Applied Biosystems™ PrepFiler™ Automated Extraction  
Cristina L. Servidio, MFS*; Rachel H. Oefelein, MSc; Brittany Stirmell, MSFS

11:30 AM – 1:00 PM  B12  An Evaluation of the Effectiveness of Flow Cytometry in Sperm Testing in Mixed Semen Specimen  
Fang Chun Chung*; Chun-Yen Lin; Kuan-Miao Yeh; Yeh-Lin Lu; Chun Changou

*Presenting Author
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B13</td>
<td>An Examination of Vaginal Swab Cross-Reactivity in Presumptive Saliva Testing</td>
<td>Emily Wiesen, MS, BS*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B14</td>
<td>Mitochondrial DNA Sequencing for Forensic Human Identification in a Saudi Arabian Context</td>
<td>Dina Al Oraer, PhD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B15</td>
<td>An Application of Chemometrics-Assisted ATR/FTIR Spectroscopy for the Identification of Human Biological Stains Exposed to Different Environmental Conditions and Estimation of the Time Since Deposition</td>
<td>Anna Barbaro, PhD*; Cristina Cano; Fernando E. Ortega-Ojeda; Carmen García-Ruiz; Gemma Montalvo</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B16</td>
<td>Cellular Autofluorescence for the Determination of Time Since Deposition of Blood Samples</td>
<td>Hannah Elizabeth Lamer, BS*; Christopher Ehrhardt, PhD, BS; Catherine Cupples Connon, PhD, MSFS; Susan A. Greenspoon, PhD</td>
</tr>
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<td>11:30 AM – 1:00 PM</td>
<td>B17</td>
<td>The Accuracy of Semen Presumptive Testing</td>
<td>Heather Rogers*; Rhonda Williams, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B18</td>
<td>The Developmental Validation Testing of the Integrated Quantifiler™ Trio-HRM Assay</td>
<td>Chastyn Smith*; Edward Boone, PhD; Tracey Dawson Green, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B19</td>
<td>A Qualitative Analysis of Natural, Synthetic, and Semi-Synthetic Cannabinoids in Vape Products by GC/MS</td>
<td>Mikayla Siegfried*; Joshua S. DeBord, PhD; Alex J. Krotulski, PhD; Heather L. Harris, MFS, JD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B20</td>
<td>Quantifying Cannabinoids in Complex Matrices</td>
<td>Michael W. Gilbert, BS; Reta Newman, MA*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B21</td>
<td>Seized Drugs: Carrier Gas Conversion of Helium to Hydrogen for GC/MS and GC/IR Instruments</td>
<td>Cody Woltz*; Sadie Kasten*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B22</td>
<td>The Structural Characterization of Nitazene Analogs Using Electron Ionization/Mass Spectrometry (EI/MS)</td>
<td>Emma Hardwick, BA*; J. Tyler Davidson, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B24</td>
<td>The Loss of Latent Fingerprint Visual Quality: Natural Degradation vs. Depletion Series</td>
<td>Josep De Alcaraz-Fossoul, PhD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B25</td>
<td>The Optimized Separation of Cannabis Terpenes/Terpenoids Via GC/EI/MS</td>
<td>Kristina Martinet*; James V. DeFrancesco, PhD; Emma Humphreys, BS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B26</td>
<td>The Quantitation of Furanocoumarins in Grapefruit Supplements Using High-Performance Liquid Chromatography</td>
<td>Nequa Griffin, MSFS*; Ellen H. Hondrogiannis, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B27</td>
<td>Ag-Ligand Ion Complexation: An Alternative Approach for Hemp and Marijuana Differentiation</td>
<td>Alleigh N. Couch, BS*; Jayleigh M. Lanza, BS; Christopher M. Zall, PhD; J. Tyler Davidson, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B28</td>
<td>A Workflow for the Rapid Analysis of Trace Drug Residues Collected From Used Paraphernalia</td>
<td>Meghan G. Appley, PhD*; Elizabeth Robinson, MS; Edward Sisco, PhD</td>
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Thursday

Poster Session

11:30 AM – 1:00 PM  B23  The Effect of Solid Copper Bullets on Barrel Rifling Characteristics  
Natali Hassett, BS*; Eric Law, PhD

11:30 AM – 1:00 PM  B35  An Analysis of Improved Methods for the Genetic Identification of Cremated Skeletal Remains  
Kadir Dastan*

11:30 AM – 1:00 PM  B36  An Examination of the EZ2 Connect Fx for Extra-Large Volume DNA Extraction and Purification From Skeletal Samples  
Jennifer L. Snedeker, BS*; Sheree R. Hughes, BSc, PhD; Rachel Houston, PhD

11:30 AM – 1:00 PM  B37  The Development of a Custom qPCR Multiplex to Quantify Human and Microbial DNA  
Miriam Foster*; Mitchell M. Holland, PhD; Jennifer McElhoe

11:30 AM – 1:00 PM  B38  The Reassociation of Highly Degraded Human Remains Found in the East Marshall Street Well Using Insertion/Null Genotyping  
Sierra Laveroni*; Andrea Malchow*; Daniela Frausto, MS; Michelle M. Woo, MS, BS; Baneshwar Singh, PhD; Filipa Simao; Tal Simmons, PhD

11:30 AM – 1:00 PM  B39  An Overview of Cannabis Seizures and Methods for Distinguishing Between Cannabis and Hemp in Croatia  
Slavena Cukrov Bezbradica, PhD; Lucija Barbarić, PhD; Kristina Jurković, PhD*; Adela Makar, PhD; Maja Jelena Ćop, PhD; Andrea Ledić

*Presenting Author
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B40</td>
<td>An Efficient Alternative to the Conventional Bone Pulverization Step for Personal Identification in 11 Real Forensic Caseworks</td>
<td>Chiara Della Rocco, PhD*; Gavino Piras; Alessandro Mameli</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B41</td>
<td>Investigative Single Cell Genetics: Determining the Probability of a Genotype After Observing Single-Cell Data Enables Robust Database Searches Regardless of Mixture Complexity</td>
<td>Qhawe A. Bhembe, MS*; Nidhi Sheth, MS; Leah M. O’Donnell, BSc, MSc; Ken R. Duffy, PhD; Desmond S. Lun, PhD; Catherine M. Grgicak, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B42</td>
<td>Locus Abundance Variation by ForenSeq™ DNA Signature Prep Kit Lot</td>
<td>Kim Eskey, MS, BS*; Kyleen Elwick, PhD; Sana Enke; Claire Levy; Marie Lovett; April Manzella, BA; Christina Scott, MS, BA; Rebecca S. Just, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B43</td>
<td>Genotyping Strategies for Tissues Fixed With Various Embalming Fluids for Human Identification, Databasing, and Traceability</td>
<td>Cassidy Callaway*; Madeline Ashton, BSc; Natalia Czado, BS, MSFS; Sheree R. Hughes, BSc, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B44</td>
<td>The Development of a Facial Phenotype Prediction Method Using Korean 3D Craniofacial Images and SNPs</td>
<td>Won Joon Lee; Joon Yeol Ryu*; Hyobong Jang*; Eunseob Park; Eunsoon Shin; Sohee Cho, PhD; Jong Eun Lee; Soo Young Lee, MD, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B45</td>
<td>The Development of Reagents, Software, and a Database for Kinship Determination in Missing Persons, Disaster Victims, and Human Rights Violation Cases</td>
<td>Gotham A. Padmabandu, MS*; Joana Antunes, PhD; Sarah M. Radecke; Michaela Russo; Erin McCarthy, BS; Juan Carlos Perez, BS; Kathryn M. Stephens, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B46</td>
<td>A 353-Plex Panel for Forensic Identification Based on Massively Parallel Sequencing Technology</td>
<td>Yingying Cheng*; Qiujuan Wang, PhD; Dong Li; Bowen Li; Shengjie Gao; Kunjie Pang, MS, BS; Xianhua Jiang; Hongqi Wang; Xiaosen Guo*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B47</td>
<td>Differentiating Marijuana From Hemp Using an NGS Panel and Rapid Genotyping Assays Targeting Cannabinoid Synthase Genes</td>
<td>Ya-Chih (Jessica) Cheng, MS*; Rachel Houston, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B48</td>
<td>Challenges of DNA Profiling After Firefighting Plane Crash: The Influence of Kerosene Biodegradation on Human Remains</td>
<td>Francesco Sessa, MS, PhD*; Martina Francaviglia, MD; Giuseppe Cocimano, MD; Salvatore Roccuzzo, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B49</td>
<td>The Development of a Multiplex SNP Genotyping RT-PCR Kit for Screening of Non-Koreans</td>
<td>Seyoung Nam*; Si-Keun Lim; Yukyoung Sin</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B50</td>
<td>The Utilization of a Single Nucleotide Variant (SNV) Panel for the Confirmation of Sample Identity in Two Clinical Genomics Applications</td>
<td>Mariana Voudouri, MD*; Donald Green, BS; Sophie Deharvenget; Joel Lefferts, PhD; Wahab A. Khan, PhD; Parth Shah, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B51</td>
<td>Examining the Risk Associated With Qualitative Exclusions in Forensic DNA Casework</td>
<td>Samantha Orans Wandzek, MS*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B52</td>
<td>STRBase Moving Forward</td>
<td>Lisa A. Borsuk*; Angela Lee; Peter Vallone, PhD</td>
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<td>Session Time</td>
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<td>Presenters</td>
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<td>11:30 AM – 1:00 PM</td>
<td>BS3</td>
<td>Ten Years of Developing and Improving CSI Camps, Forensic Science Educational Conferences, and Science Museum Programs Toward Enhancing Interest, Attitudes, and Motivation in Forensic Science</td>
<td>Steven B. Lee, PhD*; Mark Okuda, MS; Bruce R. McCord, PhD; Sara C. Zapico, PhD; Sharon L. Plotkin, EdD; Margie Phipps, MS; Analisa Duran, MS; Mary Juno, MSc</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS4</td>
<td>A Longitudinal Study on the Odor Stability of Decomposition Simulated Training Aids Under Freezing Conditions</td>
<td>Jonathan Bateman Locke*; Andrea Medrano, MS, BS; Paola A. Prada-Tiedemann, MS, BS; Chris Holleyman</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS5</td>
<td>A Pre-Concentrating Polymer Coating for Improved Detection of Fentanyl and Fentanyl Analogs</td>
<td>Galpayage Dona Lochana Jayawardana, BSc*; Lauryn DeGreeff, PhD; Ashley Fulton, PhD; Braden C. Giordano, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS7</td>
<td>An Analysis of Plant Fragments Using X-Ray Fluorescence Spectrometry and X-Ray Absorption Fine Structure Technique Utilizing Synchrotron Radiation</td>
<td>Suzuha Kurosugi*; Yoshinori Nishiwaki; Masanobu Mori</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS8</td>
<td>An Analysis of Single Synthetic Fibers by Metallic Components in Dyes by Nanobeam X-Ray Fluorescence Imaging and X-Ray Absorption Fine Structure Technique Utilizing Synchrotron Radiation</td>
<td>Keita Miyazaki, BA*; Yoshinori Nishiwaki; Masanobu Mori</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS9</td>
<td>The Application of the Expert Algorithm for Substance Identification (EASI) to the Mass Spectra of Various Bath Salts (Synthetic Cathinones)</td>
<td>Glen P. Jackson, PhD*; Alexandra I. Adeoye, MS; Jessica Orris, BS; Clarissa McQuain; Stephen P. Hokanson, BS</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS10</td>
<td>An Assessment of a Combined Field-Portable Raman Spectroscopy and Gas Chromatography/Mass Spectrometry Approach for the Analysis of Seized Drugs</td>
<td>Christina Chang, BS*; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>BS11</td>
<td>An Assessment of Odorant Permeability for Canine Training Aid Mimics in Different Containers Utilizing HS/SPME-GC/MS</td>
<td>Kayla Hogan, BS*; Katherine Dias Castro, BS; Janet M. Crespo Cajigas, MS, BS; Lauryn DeGreeff, PhD; Kenneth G. Furton, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS12</td>
<td>Color, Monogram, and Physical Measurements of Illicitly Manufactured Fentanyl Tablet Exhibits Seized Along the United States Southwestern Border</td>
<td>Joshua William Kotchev, MS, BA*; Joshua S. DeBord, PhD; Sarah A. Shuda, MSFS; Mia Borrelli, MS, BS; Amanda L.A. Mohr, MS; M.J. Menendez, JD; Thom Browne, MA; Barry K. Logan, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>BS13</td>
<td>The Detection of Airborne Methamphetamine in Contaminated Properties and Vehicles Using Active Air Sampling With Liquid Chromatography/Mass Spectrometry (LC/MS)</td>
<td>Gemma L. Kerry*; Emma J. Kuhn, BSc, Jackie Wright, PhD; Kirstin E. Ross, PhD, BSc; Stewart Walker, PhD, BSc</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>BS14</td>
<td>The Development of a Gas Chromatography/Mass Spectrometry/Selected Ion Monitoring (GC/MS/SIM) Method for Analyzing Adulterated Nitazene Samples</td>
<td>Alexa Mehlman*; Alexandra Evans, MFS, BS; Ashley N. Stallworth, MS</td>
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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B65</td>
<td>The Development of a Novel Nanocomposite Using Polypyrrole and Single-Walled Carbon Nanotubes for Headspace Solid Phase Microextraction of Alkanes in Forensic Ignitable Liquid Analysis</td>
<td>Ting-Yu Huang, MS*; Jorn Yu, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B66</td>
<td>Enhanced Ignitable Liquid and Substrate Database Functionality for Improved Casework and Research</td>
<td>Michael E. Sigman, PhD*; Nikhil Prakash, MS*; Mary R. Williams, MSc; Larry Tang, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B67</td>
<td>An Estimation of Dyeing Methods From Wool Single Fibers by Nanobeam X-Ray Fluorescence Imaging Utilizing Synchrotron Radiation</td>
<td>Yoshinori Nishiwaki*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B68</td>
<td>How to Minimize the Presence of Drug Residues on the Exterior of Drug Evidence Packaging After Analysis</td>
<td>Elizabeth Robinson, MS*; Edward Sisco, PhD; Rebecca Mead, MS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B69</td>
<td>The Identification and Classification of Major Cannabinoids Using Raman Microscopy, Chemometrics, and a Novel Artificial Intelligence Approach</td>
<td>John Hugo Laetsch, BS*; Jose Grijalva, MS; Ting-Yu Huang, MS; Patrick Buzzini, PhD; Jorn Yu, PhD; J. Tyler Davidson, PhD; Geraldine Monjardez, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B70</td>
<td>One Gunshot Is Not Enough: A Case of Suicide by Double Gunshot Wound to the Head and a Literature Review</td>
<td>Eleonora Mezzetti, MD*; Federica Spina, MD; Laura Panata, MD; Isabella Mercurio, MD; Massimo Lancia, MD; Marco Di Paolo, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B71</td>
<td>The Optimization of Sample Preparation Procedures for the Determination of Δ9-THC and Its Isomers in Seized Cannabis Oils, Concentrates, and Vapes by LC-PDA</td>
<td>Walter B. Wilson, PhD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>B72</td>
<td>WITHDRAWN</td>
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Thursday—Session I

Standards, Policies, and Surveys

Moderator: Charlotte Word, PhD

8:45 AM – 9:00 AM | B73     | Standards Development Activities in Human Forensic Biology | Jillian Conte, PhD*                                      |
| 9:00 AM – 9:15 AM | B74     | Human Factors in Forensic DNA Handbook Recommendations in Practice | Tiffany A. Roy, BS, JD, MSFS*; Sasha B. Colvin, BS* |
| 9:15 AM – 9:30 AM | B75     | Speak Now: To Be a Part of the People That Make Meaning | Nancy Dinh, BS, MS*                                       |
| 9:30 AM – 9:45 AM | B76     | Processing Gun Crimes in NYC: How the Department of Forensic Biology Was Able to Meet a 30-Day Turnaround Time | Craig O. O’Connor, PhD*; Katey Nori, MSFS |

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9:45 AM – 10:00 AM  B77  A Global Survey on Activity-Level DNA Evaluative Reporting  
Devyn Pirtle, BS*; Mechthild Prinz, MS, PhD; Fabio Oldoni, PhD

10:00 AM – 10:15 AM  BREAK

Trace and Touch DNA

Moderator: Robin Cotton, PhD  
Co-Moderator: Kristy Kadash, PhD

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

10:30 AM – 10:45 AM  B79  An Evaluation of Transfer, Persistence, and Recovery of Touch DNA From Mobile Phones  
Ashley J. Moo-Choy, MSc*; Jamie E. McGregor, HBSc; Nicole Novroski

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

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

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

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

11:45 AM – 12:00 PM  B84  A Combined Method to Locate and Improve DNA Recovery From Fabrics  
Makenzie Michelle Driever, BS*; Rhonda Williams, PhD

12:00 PM – 1:00 PM  BREAK

Body Fluid ID

Moderator: Amy Brodeur, MFS

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

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

1:30 PM – 1:45 PM  B87  A Comparative Analysis of Swabbing Solutions for Sexual Assault Evidence: The Direct Impact on Spermatozoa and DNA Recovery  
Olivia Quinn Kassie, BS*; Sarah Seashols Williams, PhD; Laura Gaydosh Combs, PhD

1:45 PM – 2:00 PM  B88  The Discovery of Additional Male-Specific Protein Markers in Semen: Potential Applications for the Processing of Sexual Assault Evidence  
Glendon Parker, PhD*; Kyle Burk, MSc; Mirna Ghemrawi, PhD, MSFS
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2:00 PM – 2:15 PM  
B99  
A Portable Microfluidic System for Rapid Serological Analysis of Forensically Relevant Body Fluids  
Taylor Grace Chambers, PhD*; Larissa L. Cunha, BS; Renna L. Nouwairi, BS; Tiffany Layne, PhD; Liam Barry, MS; Rachel Flemming, PhD; James P. Landers, PhD

2:15 PM – 2:30 PM  
B90  
To Test or Not to Test for Body Fluids: The Integration of Body Fluid Identification and Direct PCR in One Workflow  
Sara C. Zapico, PhD*; Francisco Medina Paz, PhD; Christian Stadler, PhD; M. Gabriela Roca, MSc, PhD; Santina Castriciano, BS

2:30 PM – 2:45 PM  
B91  
The Development of a Novel Multomic Assay for Biofluid Identification  
Amy N. Brodeur, MFS*; Angela Proctor, PhD; David Korest, BS

2:45 PM – 3:00 PM  
B92  
A Comparison of Traditional Serological Techniques and DNA Methylation for the Identification of Body Fluids  
Mirna Ghemrawi, PhD, MSFS*; Justin Frye, MSFB; Lindsay Loughner Kotchez, MS; Leah Nangeroni, BS

3:00 PM – 3:15 PM  
B93  
Alternative Direct-to-Amplification Cell Lysis Techniques for Forensically Relevant Non-Sperm Cells  
Rhea Arya*; Brittany C. Hudson; Tracey Dawson Green, PhD

3:15 PM – 3:30 PM  
BREAK

FIGG, Ancestry, Predictive Modeling

Moderator: Baneshwar Singh, PhD  
Co-Moderator: Amelia Bussell, MSFS

3:30 PM – 3:45 PM  
B94  
Decoding the Ocular Region From DNA: Building Predictive Models in Forensic Contexts  
Belen Navarro Lopez, MS*; Victoria Suarez-Ulloa, PhD; Rubén Martos-Fernández, PhD; Miriam Baeta Bafalluy, PhD; Oscar Ibáñez Panizo, PhD; Rebeca Guerrero; Begoña Martinez Jarreta, MD; Susana Jimenez Moreno, MD; Marian M. de Pancorbo, PhD

3:45 PM – 4:00 PM  
B95  
Targeted SNP Typing for Forensic Genetic Genealogy Using Hybridization Capture  
Rebecca S. Just, PhD*; Sana Enke; Karla Y. Garcia, PSM, BS; Rebecca Mitchell, PhD; Michelle P. Ackermann, MS

4:00 PM – 4:15 PM  
B96  
Genetic Ancestry of the Unidentified Human Remains From the East Marshall Street Well  
Filipa Simao*, Baneshwar Singh, PhD; Tal Simmons, PhD

4:15 PM – 4:30 PM  
B97  
Estimating the Return on Investment on Forensic Investigative Genetic Genealogy: Using the Golden State Killer and the University of Idaho Cases as Case Models  
Ray A. Wickenheiser, DPS, MBA*; Rachel H. Oefelein, MSc; Swathi A. Kumar, PhD

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

*Presenting Author
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Thursday—Session II

Standards Development and Related Activities Strengthening Forensic Science

Moderator: Carmen Masters, MSFS

8:30 AM – 8:45 AM  B99  Advances in Canine Science and the Implementation of National Standards
Kelvin J. Frank, PhD, MSFS*; Kenneth G. Furton, PhD

8:45 AM – 9:00 AM  B100  Current and Future Standards Development Activities Related to the Analysis of Seized Drugs
Agnes D. Winokur, MS*

9:00 AM – 9:15 AM  B101  Firearms and Toolmarks Standards and Best Practices: A Collaboration of the NIST OSAC and AAFS Standards Board
Robert M. Sanger, BA, JD*; Xiaoyu A. Zheng, MS

9:15 AM – 9:30 AM  B102  OSAC Is Ten Years Old—What Will the Next Decade Bring?
Mark D. Stolorow, MS, MBA*; John Paul Jones, BS, MBA*

9:30 AM – 9:45 AM  B103  Results From an Interlaboratory Study to Evaluate Analytical Schemes in ASTM E2329—Standard Practice for Identification of Seized Drugs
Jeremy S. Triplett, MS, BS*; Michael J. Salyards, PhD, MFS; Sandra E. Rodriguez-Cruz, PhD; Jeremiah Morris, BS; Megan Grabenauer, PhD; Darryl Creel, MS

9:45 AM – 10:00 AM  B104  Standards Development Activities in Trace Materials
Celeste M. Grover, MSFS; Sandra Koch, PhD*

10:00 AM – 10:15 AM  B105  Standards Development Activities Related to Friction Ridge Examination
Heidi Eldridge, PhD, MS*; Henry Swofford, PhD*

10:15 AM – 10:30 AM  B106  Standards Development Activities Related to Ignitable Liquids, Explosives, and Gunshot Residue
Brenda B. Christy, MS*

10:30 AM – 10:45 AM  BREAK

Forensic Science Principles

Moderator: Thaddeus Mostowtt, PhD

10:45 AM – 11:00 AM  B107  A 2024 Update From the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG)
Jaclyn Iera*

11:00 AM – 11:15 AM  B108  The Forensic Science Initiative (FSI): A Pathway to College and STEM Education
David Fisher, MS*; Barbara Elder Weller, EdD*; Kevin D. Belfield, PhD; Jacqueline L. Cusack, EdD

11:15 AM – 11:30 AM  B109  What Is the Probability That a True Match Will Appear in the Top K Correlations After a Database Search?
Alicia Laura Carriquiry, PhD*; Heike Hofmann, PhD; Blanca I. Parker, BS; Cathryn Barbour, BS

11:30 AM – 11:45 AM  B110  The European Network of Forensic Science Institutes (ENFSI) Guideline for the Calculation of Measurement Uncertainty in Quantitative Forensic Investigation
Ivo Alberink, PhD*; Rosario García-Repetto, PhD; Maria Luisa Soria Sánchez, PhD; Jus Tóth, BSc

*Presenting Author
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11:45 AM – 1:00 PM  
BREAK

Fire Debris and Explosives

Moderator: Tiffany Rodriguez, MS

1:00 PM – 1:15 PM  B111  
A Comparison of Computational and Laboratory-Generated Fire Debris Data  
Larry Tang, PhD*; Mary R. Williams, MSc; Michael E. Sigman, PhD

1:15 PM – 1:30 PM  B112  
A Fire Debris Interpretation Using Quantitative Measures of Chromatographic Features in Medium-Range Ignitable Liquids and the Use of Graphical Display to Demonstrate Data Sufficiency  
Kelsey R. Winters, MSFS*; Brenda B. Christy, MS

1:30 PM – 1:45 PM  B113  
An Evaluation of Headspace Solid Phase Microextraction of Diesel Fuel From Cotton Swabs for Forensic Analysis  
Ting-Yu Huang, MS*; Jorn Yu, PhD

1:45 PM – 2:00 PM  B114  
An Evaluation of Tape for the Collection of Ignitable Liquid Residues From Non-Porous and Porous Surfaces  
Laird Jarrett*; Cynthia J. Kaeser Tran

2:00 PM – 2:15 PM  B115  
Expert and AI Opinions: Machine-Assisted Analysis of Fire Debris  
Michael E. Sigman, PhD*; Mary R. Williams, MSc; Frances A. Whitehead, MS

2:15 PM – 2:30 PM  B116  
Investigating the Capability of DART®-MS for the Analysis of Common Homemade Explosives  
Jared Estevanes, BS*; J. Tyler Davidson, PhD; Geraldine Monjardez, PhD; Alleigh Couch, BS

2:30 PM – 3:00 PM  
BREAK

Drugs

Moderator: Beth Saucier Goodspeed, MS

3:00 PM – 3:15 PM  B117  
Combining Surface-Enhanced Raman Spectroscopy (SERS) and Paper Spray-Mass Spectrometry (PS-MS) for Illicit Drug Detection and Identification  
Sevde Dogruer Erkok, MSc; Roxanne Gallois; Leon Leegwater; Pascal Camoiras Gonzalez, MSc; Arian van Asten, PhD*; Bruce R. McCord, PhD

3:15 PM – 3:30 PM  B118  
Evaluating the Sensitivity, Stability, and Cross-Reactivity of Commercial Fentanyl Immunoassay Test Strips  
Sandra E. Rodriguez-Cruz, PhD*

3:30 PM – 3:45 PM  B119  
Exploring Evidence of Common Origin of Recreational Drug Exhibits by GC/MS  
Joshua S. DeBord, PhD*; Barry K. Logan, PhD; Alex J. Krotulski, PhD

3:45 PM – 4:00 PM  B120  
GC Derivative VUV Spectroscopy of JWH-018 Positional Isomers and Select Synthetic Cannabinoid Diastereomers  
Annika Dombrowski, BS*; Ira Saul Lurie, PhD

4:00 PM – 4:15 PM  B121  
The Effect of Spectral Intensity on Mass Spectral Discrimination of Fentanyl Positional Isomers  
Isaac C. Willis, BS*; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD

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4:15 PM – 4:30 PM  B122  The Classification of Cannabinoids Using Mass Spectral Data for the Identification of Novel Synthetic Cannabinoids
Kristopher Charles Evans-Newman, AAS*; Nuwan T. Perera, PhD; Garion Schneider

4:30 PM – 4:45 PM  B123  A Qualitative and Quantitative Analysis of Particulate Spread During Simulated Illicit Drug Manufacturing: Implications for Collection of Evidence and Crime Scene Safety
Edward Sisco, PhD*; Matthew Staymates, MS; Luis E. Arroyo, PhD

Friday—Session I

Challenging Samples

Moderator: Sheree Hughes, PhD

9:00 AM – 9:15 AM  B124  Streamlining the Extraction of Challenging Samples Using the HID NIMBUS® Presto
Kayli Carrillo, BS*; Jennifer Snedeker, BS; Natalia Czado, BS, MSFS; Sheree R. Hughes, BSc, PhD

9:15 AM – 9:30 AM  B125  The Effects of Oily Contaminants on DNA Extraction Efficiency Using DNA IQ™
Elizabeth Grace Gillece, BS*; Susan A. Greenspoon, PhD; William Eggleston, PhD

9:30 AM – 9:45 AM  B126  The Development of a Method for Complete Collagenase I Digestion of Bos Taurus Bone Samples
Reilly Elizabeth Price, BA*; Ciara Rhodes, BS; Sarah Seashols Williams, PhD

9:45 AM – 10:00 AM  B127  A Simple Tooth Preparation Method for the Applied Biosystems® RapidHIT™ ID Instrument
Morgan Elizabeth Eaton, BS*; Shane Woolf, MSFS, PhD; Samyuktha Pemmasani; Tracey Dawson Green, PhD

10:00 AM – 10:15 AM  B128  The Application of Ancient DNA Methodologies to Badly Burned Forensic Samples
Cody E. Parker, PhD*; Amber Coffman, BS; Erin M. Rawls, BS; Adam B. Rohrlach, PhD; Katelyn L. Bolhofner, Phd; Laura C. Fulginiti, PhD; Giovanna Vidoli, PhD; Joanne Devlin, PhD; Sree Kanthaswamy, PhD; Robert F. Oldt, BS; Anne Stone, PhD

10:15 AM – 10:30 AM  B129  A DNA Analysis of Degraded Skeletal Remains Obtained From the Petrous Bone, Tooth, Femur, Tibia, and Humerus: A Comparison Study
Kadir Dastan*

10:30 AM – 10:45 AM  BREAK

Probabilistic Genotyping

Moderator: Kelly Knight, MS

10:45 AM – 11:00 AM  B130  Comparing Likelihood Ratios of Degraded DNA Mixture Profiles Using DNA-View® Mixture Solution™
Cameron Filipe, MSFS, BSFS*; Charles H. Brenner, PhD; Robin W. Cotton, PhD

11:00 AM – 11:15 AM  B131  A Picture Is Worth 10,000 LRs: The Evaluation and Implementation of Tools to Improve Interpretation and Reporting of Mixtures Using Probabilistic Genotyping
Tim Kalafut, PhD*; Michael Coble, PhD

11:15 AM – 11:30 AM  B132  A Comparison of the Two Most Widely Used Probabilistic Genotyping Systems Supports Accuracy and Concordance
Susan A. Greenspoon, PhD*; Brad Jenkins, BA, MS; Lisa Schiermeier-Wood, BS, MS

*Presenting Author
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11:30 AM – 11:45 AM  B133  Beyond STRs: A Snippet Into the Challenges of Interpreting iiSNPs
Kevin Cheng, PhD, MSc*; Jo-Anne Bright, PhD

11:45 AM – 1:00 PM  BREAK

Next Generation Sequencing

Moderator: Pamela Marshall, PhD  Co-Moderator: TBD

1:00 PM – 1:15 PM  B134  An Evaluation of the FORCE Panel on Alternative Reference Materials
Sophie S. Lee, BS*; Lindsay Loughner Kotchey, MS; Leah Nangeroni, BS; Kimberly Sturk Andreaggi, PhD; Charla Marshall, PhD; Mirna Ghemrawi, PhD, MSFS

1:15 PM – 1:30 PM  B135  Variant Allele Characterization in STR Markers Using Next Generation Sequencing
Becky Steffen, MS*; Lauren Mullen, BS; Grace M. Finch; Katherine Gettings, PhD; Kevin Kiesler, MS

1:30 PM – 1:45 PM  B136  Streamlining Degraded Sample Processing in Forensic Laboratories: Developing a Decision Tree for Capillary Electrophoresis and Next Generation Sequencing Platforms
Rachel Houston, PhD*; Natalia Czado, BS, MSFS; Damani Johnson, BS; Lucio Avellaneda, BS; Cesar E. Cantu, BS; Sheree R. Hughes, BSc, PhD

1:45 PM – 2:00 PM  B137  Maximum Recovery of DNA From Degraded Remains
Erin M. Rawls, BS*; Matthew V. Emery, PhD; Amber Coffman, BS; Stevie Winingear, BS, MS; Amanda Wissler, PhD; Katelyn L. Bolhofner, PhD; Jane E. Buikstra, PhD; Laura C. Fulginiti, PhD; Adam B. Rohrlach, PhD; Cody E. Parker, PhD; Anne Stone, PhD

2:00 PM – 2:15 PM  B138  An Assessment and Validation of the iDseek® mySTR Reverse Complement PCR Technology for Y-Chromosomal STR Profiling Utilizing the MiSeq® FGx System
Lindsay Loughner Kotchey, MS*; Brian Young, PhD; Leah Nangeroni, BS; Mirna Ghemrawi, PhD, MSFS

2:15 PM – 2:30 PM  B139  Visualizing Sequencing Artifacts in ForenSeq™ NGS Data
Yao-Yuan Liu*; Kevin Cheng, PhD, MSc; Jo-Anne Bright, PhD

2:30 PM – 2:45 PM  B140  Expanding the STRSeq BioProject to Support Sequenced-Based STR Nomenclature
Lauren Mullen, BS*; Katherine Gettings, PhD; Lisa A. Borsuk

2:45 PM – 3:00 PM  B141  An Exploration of a Sequence-Specific Stutter Model for STR Analysis in Next Generation Sequencing
Damani Johnson, BS*; Tim Kalafut, PhD

3:00 PM – 3:15 PM  BREAK

DNA Potpourri

Moderator: Fabio Oldoni, PhD

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

*Presenting Author
CRIMINALISTICS

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

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

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

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

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

Friday—Session II

Crime Scene and GSR

Moderator: TBD

9:00 AM – 9:15 AM  B148  Proactive Crime Scene Response Improves Criminal Investigations  
Ray A. Wickenheiser, DPS, MBA*

9:15 AM – 9:30 AM  B149  An Interagency Study of Scene Investigation Using Virtual Reality (VR) Tools  
Jaclynn McKay, BS*; Kelly Keyes, BS; John H. Grassel, MS; Edward Hill, BS; Nicholas Thomas, PhD, MPH

9:30 AM – 9:45 AM  B150  The Presence of Inorganic Gunshot Residue (iGSR) in Police Vehicles: A Study at the Zagreb County Police Administration in Croatia  
Sunčica Kuzmić, MChE*; Hrvoje Senjes, MS; Ivan Jerković, PhD, MSc

9:45 AM – 10:00 AM  B151  The Prevalence of GSR and the Mitigating Quality Procedures at Harris County Institute of Forensic Sciences  
Brittany S. Claassen, MS*; Audrey Pless; Leslie A. Dixon, BS; Jason L. Schoeder, MS, MBA

10:00 AM – 10:15 AM  B152  Utilizing Gas Chromatography/Mass Spectrometry (GC/MS) to Determine the Effect of Solvent Extraction Parameters on Forensic Smokeless Powder Analysis  
Leighann Rose Weber, BS*; Kelli A. Simon, PhD; Ryan Bain, PhD; Eric Hazelrigg, MS

10:15 AM – 10:30 AM  BREAK

*Presenting Author
Firearms

Moderator: TBD

10:30 AM – 10:45 AM  B153  Advancements in 3D Technology and Virtual Comparison Microscopy for Ballistic Identification
Logan Eickhoff, BS, BA*

10:45 AM – 11:00 AM  B154  Feature Similarity (FS) and Congruent Matching Features (CMF) Methods for Comparison of Impressed Toolmarks in Firearm Evidence Identification
Junfeng J. Song, PhD*

11:00 AM – 11:15 AM  B155  The Impact Behavior of 9mm Jacketed Hollow Point Bullets on Laminated Glass
Zoe Timothy, BS*; Michael Kusluski, MFS

11:15 AM – 11:30 AM  B156  The Interoperability of Firearm Toolmark 3D Measurements on Objective Similarity Metrics
Xiaoyu A. Zheng, MS*; Johannes Soons, PhD; James Yen, PhD

11:30 AM – 11:45 AM  B157  The Effect of Gunshot Angle of Incidence on Distance Determination
Alexander W. Jason, MSFS*; Andres Marco, PhD, MS

11:45 AM – 1:00 PM  BREAK

Friction Ridge and Canines

Moderator: TBD

1:00 PM – 1:15 PM  B158  A Needle in a Haystack: Are Those “Rare” Minutiae in Palms Really as Uncommon as You Think?
Heidi Eldridge, PhD, MS*

1:15 PM – 1:30 PM  B159  Interdigital Frequencies of Pattern Types and Their Arrangements as a Key to Palm Print Identification
Angela Tonietto, MS*; Jemima Santos

1:30 PM – 1:45 PM  B160  Toward Consistency in Latent Print Examiners’ Naming Conventions and Minutiae Frequency Estimations
Adele Quigley-McBride, PhD*; Heidi Eldridge, PhD, MS*; Brett Gardner, PhD*

1:45 PM – 2:00 PM  B161  Not Everything Is as It Seems: The Importance of Minutiae
Julia Lazzari, MD*; Giulia Berneschi, MD*; Chiara Casula, MD; Arianna Baronti, MD; David Forni, MD; Aniello Maiese, PhD; Andrea Scatena, MD

2:00 PM – 2:15 PM  B162  Dog Bites or Knife Wounds? A Case Report of Atypical Neck Injuries
Eulalie Pefferkorn*; Fabrice Dedouit, MD, PhD; Frederic Savall, MD, PhD; Agathe Bascou, MD; Norbert Telmon, MD, PhD; Pauline Saint Martin, PhD

2:15 PM – 2:30 PM  B163  Odor Contamination in Explosive Canine Training Aids and Steps Toward Contaminant Mitigation Through Off-Gassing
Katherine Dias Castro, BS*; Lauryn DeGreeff, PhD; Tyler Roberts; Reagan M. Bridges; Monica Lopez; Jordi Cruz Sanchez
CRIMINALISTICS

2:30 PM – 2:45 PM  B164  An Improved Analysis of Nylon Microplastic Trace Evidence Through Enhanced Signal-to-Noise Ratio in Room-Temperature Fluorescence Spectroscopy  
Noah Michael Froelich, MS, BS*; Andres D. Campiglia, PhD

2:45 PM – 3:00 PM  BREAK

Trace Evidence, Fibers, Soil, Paint, and Footwear

Moderator: TBD

3:00 PM – 3:15 PM  B165  An Evaluation of a Comprehensive Raman Spectral Library for the Identification of Soil Minerals  
Jasmine Kaur*; Chase Notari, MS; Brooke W. Kammrath, PhD

3:15 PM – 3:30 PM  B166  Pigment Identification in Solution-Dyed Fibers  
Christopher S. Palenik, MS, PhD*; Kelly Beckert, MS, BS; Otyllia Abraham, MS, BS; Ethan Groves, BS; Skip Palenik, BS

3:30 PM – 3:45 PM  B167  Polarized Light Microscopy of Vegetable Fibers  
Walter Frederick Rowe, PhD*

3:45 PM – 4:00 PM  B168  The Application of Particle-Correlated Raman Spectroscopic Analysis of Soils to Mock Casework Scenarios  
Samantha Gong, BS*; Brooke W. Kammrath, PhD; Marisia A. Fikiet, PhD; Peter R. De Forest, DCr

4:00 PM – 4:15 PM  B169  The Capabilities and Limitations of Particle-Correlated Raman Spectroscopy (PCRS) for the Analysis of Forensic Soil Minerals  
Jasmine Kaur*; Joshua Christensen*; Ethan Groves, BS; Skip Palenik, BS; Christopher S. Palenik, MS, PhD; Peter R. De Forest, DCr; Marisia A. Fikiet, PhD; Virginia M. Maxwell, DPh, BSc; Brooke W. Kammrath, PhD

4:15 PM – 4:30 PM  B170  The Differentiation of Architectural Paint by Sheen Using Reflectance Spectroscopy  
Alethea Nicole Morris, BS*; Lawrence Quarino, PhD

4:30 PM – 4:45 PM  B171  The NIST Footwear Impression Comparison System  
Steven Lund, PhD*; Sourabh Yelluru, MS; Adam Pintar, PhD; Hariharan Iyer, PhD

Saturday

Cannabis and Hemp

Moderator: Agnes Winokur, MS

9:00 AM – 9:15 AM  B172  An Investigation of Extraction Protocols for the Analysis and Quantitation of Cannabinoids in Gummy Matrices Using Liquid Chromatography and Photodiode Array/Ultraviolet Detection  
Haley Jensen, BS*; Aaron Urbas, PhD; Walter B. Wilson, PhD; Ira Saul Lurie, PhD

Wagner Pacheco, PhD*; Igor Coreixas, MSC; Rafael Dornellas, PhD; Savanah Allinson; Shakyrah Golden; Justin L. Poklis, BS; Emanuele Alves, PhD

*Presenting Author
<table>
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<tr>
<th>Time</th>
<th>Session No.</th>
<th>Title</th>
<th>Presenters</th>
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<tr>
<td>9:45 AM – 10:00 AM</td>
<td>B175</td>
<td>Trace Metals in Cannabis Seized by Law Enforcement in Ghana and Multivariate Analysis to Distinguish Among Different Cannabis Farms</td>
<td>Edward Bentil, MPhil, BSc*</td>
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<tr>
<td>10:00 AM – 10:15 AM</td>
<td>B176</td>
<td>Are Smokable Hemp Products Correctly Labeled?</td>
<td>Walter B. Wilson, PhD*; Aaron Urbas, PhD</td>
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<tr>
<td>10:15 AM – 10:30 AM</td>
<td>B177</td>
<td>The Application of the Expert Algorithm for Substance Identification (EASI) to Resolve THC and CBD ESI-Mass Spectra</td>
<td>Alexandra I. Adeoye, MS*; Jacob King, BS; Glen P. Jackson, PhD</td>
</tr>
</tbody>
</table>
Thursday

JUST for Starters: Talking About The Forensic Analysis of Mobile Devices

Moderator: Josh Brunty, ScD

8:30 AM – 8:50 AM  C1  A Forensic Analysis of Veo Micromobility Mobile Application on iOS® Devices
Nina Matulis, MS*; Umit Karabiyik, PhD; Marcus Rogers, PhD; Baijian Yang

8:50 AM – 9:10 AM  C2  A Forensic Analysis on Major Android™ Cloud SDKs
Chen Shi, PhD*; Yong Guan, PhD

9:10 AM – 9:30 AM  C3  Geodata Sleuthing: Geo-Contextualized Digital Footprints Analysis to Empower Cyber Forensic Investigations and Life Pattern Analysis
Mohammad Meraj Mirza, PhD*; Umit Karabiyik, PhD

9:30 AM – 9:50 AM  C4  The Development, Testing, and Comparison of Decontamination Methods for Drugs and Ignitable Liquids From Mobile Devices
Christopher Michael Haser, BS*; Kimberly S. Kunkler, PhD; Lauren L. Richards-Waugh, PhD

9:50 AM – 10:00 AM  BREAK

It JUST Goes to Show . . . Or Does It?

Moderator: Vir Phoha, PhD

10:00 AM – 10:20 AM  C5  Using File Structure to Authenticate Video Files Uploaded to Cloud Storage Via iOS® Mobile Web Browser
Brandon Epstein, MS*; Bertram Lyons, MA*

10:20 AM – 10:40 AM  C6  An Overview of Deepfake Technologies: From Creation to Detection in Forensics
Luca Guarnera, PhD*; Sebastiano Battiato, PhD

10:40 AM – 11:00 AM  C7  The Application of Artificial Intelligence in Forensic Science AI4Forensics From Deepfakes to Risks and Challenges
Zeno J. Geradts, PhD*

11:00 AM – 11:20 AM  C8  Searching for Hidden Data in Multimedia Files With UNCOVER
Zeno J. Geradts, PhD*

11:20 AM – 1:00 PM  BREAK

JUST in Time: Verifying Multimedia Evidence

Moderator: Christina Malone, MSFS

1:00 PM – 1:20 PM  C9  The Accuracy of Time Stamps on Surveillance Recording Devices
Benjamin Tyler Molnar, BSME*; Toby Terpstra; Tilo Voitel

1:20 PM – 1:40 PM  C10  Forensic Video Analysis of an Underwater Volcanic Explosion That Injured Multiple Tour Boat Passengers
Parris Ward, BA, JD*

*Presenting Author
**DIGITAL & MULTIMEDIA SCIENCES**

1:40 PM – 2:00 PM  **C11**  An MDCT Analysis of Copy-Paste Fragments Without Query in Digital Forensic Audio  
*Catalin Grigoras, PhD*; *Cole Whitecotton, MSc*

2:00 PM – 2:20 PM  **BREAK**

2:20 PM – 2:40 PM  **C12**  Navigating the SILK Road: An Examination of WeChat SILK Audio Files  
*Andrew N. Crouse, BA*; *Douglas S. Lacey, MS, BS*; *Brian Smith, BS*; *In Yong Shin, BE*; *Louis Chan, BBA*; *Ricky W.K. Lam, BS*

2:40 PM – 3:00 PM  **C13**  Validation of Image Stream Hashing: A Forensic Method for Content Verification  
*Gregory S. Wales, DFS*

3:00 PM – 3:30 PM  **BREAK**

**JUSTice For All: Joining Digital & Multimedia With Jurisprudence**

**Moderator:** Grace Rubio, BS

3:30 PM – 3:50 PM  **C14**  Modeling Influences on the Understanding of Digital and Multimedia Evidence (DME) by Attorneys and Digital Forensic Examiners (DFE) Within the United States Criminal Justice System  
*Joseph Levi White, PhD*

3:50 PM – 4:10 PM  **C15**  Uncovering Ethical and Legal Issues Associated With the Rising Trend of Using Chatbots—Crime Scene Investigation and Scientific Publishing  
*Ankit Guleria, MSc*; *Rakesh Meena, MSc*; *Nandini Chitara, MSc*; *Vishal Sharma, PhD*; *Kewal Krishan, PhD*

4:10 PM – 4:30 PM  **C16**  The Case of the Distracted Pedestrian: The Importance of Experts in Digital Forensics  
*Jason R. Lewis, PhD*

4:30 PM – 5:00 PM  **C17**  The Potential for Impacting Unsolved Case Outcomes With the Inclusion of Digital and Multimedia Evidence (DME) Forensics Into Cold Case Units  
*Joseph Levi White, PhD*

**Friday**

**JUST To Let You Know: Ensuring Quality and JUSTice in Digital & Multimedia Sciences**

**Moderator:** Josh Brunty, ScD

9:00 AM – 9:20 AM  **C18**  A Study of Digital Evidence (DE) Processing Efficiencies in Publicly Funded Crime Laboratories  
*Christopher L. Williams, BS*; *Peyton Attaway, MPH*; *Nichole D. Bynum, MS*; *Crystal Daye, MPA*; *Hope M. Smiley-McDonald, PhD*; *John H. Grassel, MS*

9:20 AM – 9:40 AM  **C19**  Standards Development Activities in Digital and Multimedia Forensic Science  
*Tracy Walraven, MFS*

*Presenting Author*
## DIGITAL & MULTIMEDIA SCIENCES

### 9:40 AM – 10:00 AM  
**C20**  What’s VITAL When It Comes to Digital/Multimedia Standards? An Update From the OSAC Video/Imaging Technology & Analysis (VITAL) Subcommittee  
*Christina A. Malone, MSFS*; *Marla E. Carroll, BS*; *Neil F. Johnson, PhD*;  
*Melissa Kimbrell; Michelle Montonera, MS*

### 10:00 AM – 10:10 AM  
**BREAK**

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### JUST The Facts: Computer Forensic Investigations

**Moderator: Alex Nelson, PhD**

### 10:10 AM – 10:30 AM  
**C21**  The Integration of Forensic Science and Artificial Intelligence: The Implications in Crime Scene Investigations  
*Nandini Chitara, MSc*; *Damini Siwan, MSc*; *Ankita Guleria, MSc*; *Rakesh Meena, MSc*;  
*Vishal Sharma, PhD*; *Kewal Krishan, PhD*

### 10:30 AM – 10:50 AM  
**C22**  WITHDRAWN

### 10:50 AM – 11:10 AM  
**C23**  Live Memory Acquisition for STM32-Based Microcontrollers With ARM TrustZone  
*Karley Waguespack, BS*; *Aisha Ali-Gombe, PhD*

### 11:10 AM – 11:30 AM  
**C24**  Live Memory Forensics of Field Devices in Industrial Control Systems  
*Irfan Ahmed*

### 11:30 AM – 1:00 PM  
**BREAK**

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### This JUST In: Tools and Their Developments

**Moderator: TBD**

### 1:00 PM – 1:20 PM  
**C25**  Provenience-Based Cross-Verification of Digital Forensic Artifacts Applied to NTFS  
*Alex J. Nelson, PhD*; *Sheldon L. Douglas*

### 1:20 PM – 1:40 PM  
**C26**  Testing File Carving Tools  
*James R. Lyle, MS, PhD*; *Barbara Guttman, BA*

### 1:40 PM – 2:00 PM  
**C27**  The Latest Developments in Sailfish OS Forensics  
*Krassimir T. Tzvetanov, MS*

### 2:00 PM – 2:20 PM  
**C28**  Toward Personal Internet-of-Things User Attribution During Forensic Investigations  
*Shinelle Hutchinson*; *Umit Karabiyik, PhD*

### 2:20 PM – 2:30 PM  
**BREAK**

*Presenting Author*
DIGITAL & MULTIMEDIA SCIENCES

JUST Think: New and Novel Techniques in Multimedia Forensics

Moderator: Jason Latham, BA

2:30 PM – 2:50 PM  C29  Deep Audio Analyzer: A Framework to Industrialize the Research on Audio Forensics
Valerio Francesco Puglisi, MS, BS*; Sebastiano Battiato, PhD; Oliver Giudice, PhD

2:50 PM – 3:10 PM  C30  The Impact of Multi-Camera Smart Phones on Source Camera Identification
Stephanie Reinders, PhD*; Danica M. Ommen, PhD; Alicia Laura Carriquiry, PhD

3:10 PM – 3:30 PM  C31  Research and Development of the Next Generation Digital Forensic Image Transmission Tool
Kevin Fairbanks, PhD*; Mark Guido, MS

3:30 PM – 3:50 PM  C32  Poses and Grimaces: Challenges for Automated Face Identification Algorithms?
Petra Urbanova, PhD*; Dominik Cerny, MSc; Tomas Goldmann, MSc
### Thursday

#### Poster Session

**11:30 AM – 1:00 PM**  **D1**  **Technology Advances in Crime Scene Investigation**  
Massimiliano Esposito, MD*; Giuseppe Li Rosi, PhD; Elisa Pappalardo, MD; Monica Salerno, MD

#### Forensic Analysis/Collision Reconstruction

<table>
<thead>
<tr>
<th>Time</th>
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<th>Title</th>
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<tbody>
<tr>
<td>8:30 AM – 8:45 AM</td>
<td>D2</td>
<td>A Method for the Evaluation of Upper Rear Vehicle Structures</td>
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<td>Brian Herbst, PE*; Chris Clarke, BS</td>
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<tr>
<td>8:45 AM – 9:05 AM</td>
<td>D3</td>
<td>Rear Impact Crashworthiness Defects Proven by Forensic Analysis Combined With Static and Dynamic Testing: The Failures of Seats, Head Restraints, and Belts</td>
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<td>Mark C. Pozzi, MS*</td>
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<td>9:05 AM – 9:20 AM</td>
<td>D4</td>
<td>Mapping Vehicle Headlights to Identify the Threshold of Human Visual Performance in a Nighttime Visibility Study</td>
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<td>Jorge Mendoza, BS*</td>
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<tr>
<td>9:20 AM – 9:30 AM</td>
<td>D5</td>
<td>An Experimental Analysis of How Non-Nominal Sitting and Pyrotechnic Seat Belt Pretensioners Interact</td>
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<td>Adam Goodworth, MS, PhD*</td>
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<td>9:30 AM – 9:50 AM</td>
<td>Break</td>
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<td>9:50 AM – 10:10 AM</td>
<td>D6</td>
<td>Photogrammetry Software Used to Survey Site, Map Tire Friction Marks, and Recreate the Driver’s View in Support of Alternative Collision Scenarios</td>
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<td>Kurt D. Weiss, MSME*; Jorge Mendoza, BSME</td>
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<tr>
<td>10:10 AM – 10:30 AM</td>
<td>D7</td>
<td>Recreational Vehicle Crashworthiness: Enhanced Injury Caused by Unsafe Vehicle Interior Structures Combined With Predictable Seat and Belt Failures</td>
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<td>Mark C. Pozzi, MS*</td>
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<tr>
<td>10:30 AM – 10:45 AM</td>
<td>D8</td>
<td>Visibility Study Uses Camera Tracking Software to Analyze Dashcam Video in a Bicycle Collision</td>
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<td>Jorge Mendoza, BS*</td>
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<td>10:45 AM – 11:45 AM</td>
<td>D9</td>
<td>Slip and Fall: Methods of Simulation and Validation of a Formula</td>
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<td>Darren Franck, MSME*; Harold Franck, MSEE*; Vincent D. Franck; Alexander Franck</td>
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<tr>
<td>11:45 AM – 1:00 PM</td>
<td>Break</td>
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*Presenting Author*
## Statistics and Machine Learning #1

Moderator: Jatin Bodwal, MD

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<th>Time</th>
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<tr>
<td>1:00 PM – 1:20 PM</td>
<td>D10</td>
<td>Comparing Statistical/Machine Learning Approaches to Identifying Authorship</td>
<td>Francesco Gabriele Strafforello, MA*; Carole E. Chaski, PhD</td>
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<td>1:20 PM – 1:40 PM</td>
<td>D11</td>
<td>Counterexamples for the Use of Spectrogram Comparison as a Method of Forensic Speaker Recognition by Law Enforcement and in Courts as Evidence</td>
<td>Jeffrey Nathaniel Holmes*</td>
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<td>1:40 PM – 2:00 PM</td>
<td>D12</td>
<td>Using Statistical Analysis to Assist With Writer Identification</td>
<td>Mike Wakshull, MS, BS*</td>
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<tr>
<td>2:00 PM – 2:20 PM</td>
<td>D13</td>
<td>Linguistics, Computer Vision, and Handwriting Identification: HANDLER</td>
<td>Carole E. Chaski, PhD*</td>
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<tr>
<td>2:20 PM – 2:35 PM</td>
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## Statistics and Machine Learning #2

Moderator: Jatin Bodwal, MD

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<td>2:35 PM – 2:55 PM</td>
<td>D14</td>
<td>Presenting Model Uncertainty to Decision Makers</td>
<td>Willem A. Schreuder, PhD*</td>
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<td>2:55 PM – 3:25 PM</td>
<td>D15</td>
<td>Graph Theoretic Techniques for Image Comparisons</td>
<td>Gautham Venkatasubramanian*; Alicia Laura Carriquiry, PhD</td>
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<tr>
<td>3:25 PM – 3:30 PM</td>
<td>D16</td>
<td>Quantitative Matching of Forensic Evidence Fragments Using Fracture Surface Topography and Statistical Learning</td>
<td>Ashraf Bastawros, PhD*; Ranjan Maitra, PhD; William Meeker, PhD; Lauren Claytor, MS, BS</td>
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<td>3:30 PM – 3:50 PM</td>
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## Innovation in Forensic Science

Moderator: Carole Chaski, PhD

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<tr>
<td>3:50 PM – 4:05 PM</td>
<td>D17</td>
<td>Innovation Fundamentals: The Prelude for Next Generation Advances in Forensic Sciences</td>
<td>David Pienkowski, PhD, MBA*; Jacklyn N. Ady, MBA, BS</td>
</tr>
<tr>
<td>4:05 PM – 4:25 PM</td>
<td>D18</td>
<td>What Researchers and Practitioners Should Know About the Forensic Innovation Ecosystem</td>
<td>Rebecca L. Shute, MS*</td>
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<tr>
<td>4:25 PM – 4:40 PM</td>
<td>D19</td>
<td>The Use of STL Technology and 3D Processing in Forensics: New Tools and a Multidisciplinary Approach</td>
<td>Gennaro Baldino, MD*; Fabio Salmeri*; Daniela Sapienza, MD*; Filippa Cucinotta; Marcello Raffaele; Alessio Altadonna; Cristina Mondello, MD; Vincenzo Cianci; Elvira Ventura Spagnolo, MD; Alessio Asmundo, MD</td>
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<tr>
<td>4:40 PM – 5:00 PM</td>
<td>D20</td>
<td>Rule 702: Origins and Implications for Engineers and Attorneys</td>
<td>Gail Groy, JD*; David Pienkowski, PhD, MBA</td>
</tr>
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</table>
Friday—Session I

Poster Session

11:30 AM – 1:00 PM  D21  A Study on the Application of the Genetic Algorithm for Fall Analysis
Chan-Seong Park, PhD*

EDR Analysis Applied to Crash Reconstruction

Moderator: Harold Franck, MSEE  Co-Moderator: Darren Franck, MSME

8:30 AM – 9:00 AM  D22  Comparing Event Data Recorder (EDR) Pre-Crash Data With UTC Time Codes in Cell Phone Records and Pre-Crash Data and UTC Data in Front Camera Modules (FCMs)
Billy S. Cox*

9:00 AM – 9:30 AM  D23  Using EDR Pre-Crash Data to Evaluate Driver Behavior in Traffic Collisions
Kurt D. Weiss, MSME*; Billy Cox*; Robert Anderson, MSBE*

9:30 AM – 9:50 AM  D24  Understanding the Limitations of EDR Data for Crash Reconstruction
Brendan Bourdage, PhD*; John Smith, MSEE, PE; Peter Alexander, PhD

9:50 AM – 10:25 AM  D25  Vehicle Wheel Speed: Did Tire Wear Lead to a Sudden Loss of Control on a Wet Road?
Billy S. Cox*

10:25 AM – 10:40 AM  BREAK

Crime Investigation Techniques

Moderator: Harold Franck, MSEE  Co-Moderator: Darren Franck, MSME

10:40 AM – 11:00 AM  D26  The Detection of Blood Stains on Natural, Semi-Synthetic, and Synthetic Fabric Exposed to Extreme Environmental Conditions Using ATR/FTIR Spectroscopy
Entesar Al-Hetlani, PhD*; Zainab Hussain; Meshari Al-Qalfas; Mohamed Amin, PhD; Igor K. Lednev, PhD

11:00 AM – 11:15 AM  D27  Fluorescent Carbon Quantum Dots Produced From Natural Resources for Sweat Latent Fingerprint Recognition
Amarnath Mishra, MPhil, PhD*; Nisha Yadav, MSc; Vivek Mishra, PhD

11:15 AM – 11:35 AM  D28  The Discrimination of Smokers and Non-Smokers Based on the Analysis of Fingermarks Using ATR/FTIR Spectroscopy and Chemometrics
Mohamed Amin, PhD*; Entesar Al-Hetlani, PhD; Igor K. Lednev, PhD

11:35 AM – 11:55 AM  D29  The Influence of Taphonomic Changes on the Persistence of Serrations in Stab Wounds
Sarah V. Hainsworth, BEng, PhD*; Sophie A. Stanley, MBChB, BSc; Guy N. Rutty, MBBS, MD

11:55 AM – 1:00 PM  BREAK

*Presenting Author
Environmental

Moderator: Kurt Weiss, MS

1:00 PM – 1:15 PM  D30  Environmental Forensic Microscopy Considering Assemblages for World Trade Center Dust and Wildfire Smoke
James Millette, PhD*

1:15 PM – 1:30 PM  D31  Noxious Gas Inhalations—A Lethal Occupational Hazard While Cleaning Effluent Treatment Plants in India: A Forensic Analysis
Deen Dayal, MBBS, MD*; Jatin Bodwal, MBBS, MD; Mohit Chauhan, MBBS; MD

1:30 PM – 1:45 PM  D32  The Ruggedness of a Kinetic Model to Predict Chromatograms of Gasoline Under Different Evaporation Conditions
Hannah Jewell LaVoie, BS*; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD

1:45 PM – 2:00 PM  BREAK

Artificial Intelligence: Machine Generated Text

Moderator: Kurt Weiss, MS

2:00 PM – 2:20 PM  D33  Data Collection of Forensically Feasible AI-Generated Texts: The ILE AI-Generated Corpus
Colton B. Wolk, BS*

2:20 PM – 2:40 PM  D34  The Lexical Characteristics of AI-Generated Texts
Colton B. Wolk, BS*

2:40 PM – 3:00 PM  D35  The Semantic Characteristics of AI-Generated Texts
Francesco Gabriele Strafforello, MA*

3:00 PM – 3:20 PM  D36  The Syntactic Characteristics of AI-Generated Texts
Samuel Olanrewaju, MA*

3:20 PM – 3:35 PM  D37  A Statistical Authorial Modeling of AI-Generated and Human-Generated Texts
Carole E. Chaski, PhD*; Colton Walk, BS; Francesco Gabriele Strafforello, MA; Samuel Olanrewaju, MA

Friday—Session II

Multidisciplinary Session: Engineering & Applies Sciences and Forensic Nursing Science

Moderator: Kathy Bell  Co-Moderator: Paul Johnson, PhD

9:00 AM – 9:15 AM  D38  Bone Injuries in Nursing Home Residents
David Pienkowski, PhD, MBA*

9:15 AM – 9:30 AM  E20  Crowd Surge Triggers and Mitigating Factors
David A. Williams, DDS, MPH*; Joyce P. Williams, DNP, MFSA, RN

9:30 AM – 9:45 AM  D39  Electrical Injury Causes: Part 2—Evidence Retention
Helmut G. Brosz, BASc, DBA*
<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
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<tr>
<td>9:45 AM – 10:00 AM</td>
<td>E21</td>
<td>Interdisciplinary Research Related to Sexual Violence and Dating App Usage</td>
<td>Emma Mae Walquist, BS*; Douglas Zytka; Michele Parkhill; Melissa M. McDonald, PhD;</td>
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<td>Kelly A. Berishaj, DNP, MSN; Wenqi Zheng, MS, BA; Xiangyu Zhou; Dongxiao Zhu</td>
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<tr>
<td>10:00 AM – 10:15 AM</td>
<td>D40</td>
<td>Powered Two-Wheeler Safety: An Experimental Analysis of Injuries and Injury Mechanisms Using Instrumented PMHS</td>
<td>John H. Bolte, PhD, MSc*; Amanda M. Agnew, PhD; Yun-Seok Kang, PhD</td>
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<td>10:15 AM – 10:30 AM</td>
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<td>BREAK</td>
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<tr>
<td>10:30 AM – 10:45 AM</td>
<td>E22</td>
<td>Shaken Baby Syndrome—A Force to Be Reckoned With: A Case Review</td>
<td>Janean M. Fossum, BSN*</td>
</tr>
<tr>
<td>10:45 AM – 11:00 AM</td>
<td>D41</td>
<td>What Is Known About Pregnant Occupants and Fetal Risk in Car Crashes</td>
<td>Adam Goodworth, MS, PhD*; Ciboney Hellenbrand; Charlotte Bloom; Ashley Pitzen</td>
</tr>
<tr>
<td>11:00 AM – 11:15 AM</td>
<td>E23</td>
<td>&quot;Compressed Baby Head&quot;: A New “Abusive Head Trauma” Entity?</td>
<td>Enrica Macorano, MD*; Mattia Gentile; Giandomenico Stellacci; Mariano Manzionna; Stefano Duma, MD; Raffaella Minella; Aldo Di FazioFazio</td>
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<tr>
<td>11:15 AM – 11:30 AM</td>
<td>D42</td>
<td>A Child Fatality in a Vehicular Rear Impact: A Forensic Analysis and Static Testing to Scientifically Prove Seat and Belt Failures</td>
<td>Mark C. Pozzi, MS*</td>
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</table>
# Poster Session

11:30 AM – 1:00 PM  **E1**  
Is a Nurse Also a Forensic Nurse? Gaining a Forensic Insight: Empowering Nurses in Addressing Interpersonal Violence  
Valeria Kaegi, RN; Michael J. Thali, MD*

11:30 AM – 1:00 PM  **E2**  
The Progress of Forensic Nursing in Japan  
Naomi Kano*; Nanako Yoneyama, MS

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# Morning Session

**Moderator:** Laurie Charles, MSN  
**Moderator:** Sylvia Perez, BSN

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<tr>
<th>Time</th>
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| 9:00 AM – 9:15 AM | E3      | Community-Based Forensic Nursing: The Development of Fully Functioning Forensic Programs in a Rural State  
Kacie Parrish, BSN, RN*; Abigail Ellis, BSN |
| 9:15 AM – 9:30 AM | E4      | Creating a Clinical Preceptor Course for SANE Pediatric/Adolescent Nurses  
L. Kathleen L. Sekula, MSN, PhD*; Cheryl Wier, MSN, RN; Susan Buxbaum, DNP; Meghan Currie, BS |
| 9:30 AM – 9:45 AM | E5      | One Voice, One Vision: A System Approach to Sustaining a Best Practice Model With Forensic Nursing for Quality Patient Care, Community Safety, Credible Judicial Outcomes, and Staff Retention  
Jamie Ferrell, MBA, BSN*; Mary E. Carrillo, MSN, MBA; Bryan Sisk, DNP, MPH |
| 9:45 AM – 10:00 AM | E6      | Tracking Sexual Assault Kits (SAKs) and CODIS-Eligible Profiles  
Sabrina Riddles*; Ricardo Ruiz; Gang Han; Rebecca Vieh, MS; Nancy R. Downing, PhD |
| 10:00 AM – 10:15 AM | E7      | Who Doesn’t Report to the Police? A Quantitative Analysis of Victim, Offender, and Assault Characteristics for Non-Report Sexual Assault Medical Forensic Examinations  
Jessica Volz, DNP*; Rachael Goodman-Williams, PhD* |
| 10:15 AM – 10:30 AM | BREAK   |                                                                                            |
| 10:30 AM – 10:45 AM | E8      | Lock-Downs Causing Lock-Ins: The Impact of the COVID-19 Pandemic on Domestic and Intimate Partner Violence Trends Observed by Forensic Nurse Examiners  
Sydney Rachel Kennedy, PhD, MSN*; Christina Yannetsos, MD; Erin Aschman, RN; Kerry Peterson, PhD, DNP; Christine Foote-Lucero, MSN, RN |
| 10:45 AM – 11:00 AM | E9      | Stay at Home, Stop the Virus, Stay Safe? The Impact of the Coronavirus Pandemic on Intimate Partner Violence in England and Wales for Heterosexual Female Victims  
Kate Wilson, MS, BSc*; Sajeel Shah, PhD, MS; Nikolas Lemos, PhD |
| 11:00 AM – 11:15 AM | E10     | We Can Help Health Care Professions Understand and Do More: The Survivors of Intimate Partner Violence in Israel Talk  
Orli Grinstein-Cohen, RN, PhD*; Bar Eisenmann, RN |
| 11:15 AM – 11:30 AM | E11     | Forensic Nursing in the Balkan Region  
Erşi Abaci Kalfoglou*; Virginia A. Lynch, MSN; Sotirios Kalfoglou; Emel Hülüya Yükseloğlu |
| 11:30 AM – 1:00 PM | BREAK   |                                                                                            |
Afternoon Session

Moderator: Michelle Patch, PhD, MSN
Co-Moderator: Moderator: Jessica Volz, DNP

1:00 PM – 1:15 PM E12 Sexual Assault Has a Chokehold on Forensic Nursing
Crystal G. Schwerdfeger, BS*; Arianne Bauer, BS

1:15 PM – 1:30 PM E13 The Implementation of a Risk Assessment Screening Tool to Detect Elder Abuse in the Emergency Department
Laura La Cagnina, DNP, RN*

1:30 PM – 1:45 PM E14 Forensic Nurse Focus: The Care of Persons With Disabilities
Janean M. Fossum, BSN*

1:45 PM – 2:00 PM E15 A Forensic Nursing Response to Workplace Violence Using the Worker Well-Being® Model
Jessica Volz, DNP*; Karen Heaton, PhD; Patricia M. Speck, DNSc

2:00 PM – 2:15 PM BREAK

2:15 PM – 2:30 PM E16 Forensic Nursing Science: Investigation as a Care Component in Trauma and Death
Virginia A. Lynch, MSN*; Carrie E. Edwards, PhD*

2:30 PM – 2:45 PM E17 The Forensic Nurse’s Role in Investigating Trauma: Two Clinical Case Studies on Factitious Disorder
Carrie E. Edwards, PhD*; Virginia A. Lynch, MSN; Donna Scott Tilley, PhD, RN

2:45 PM – 3:00 PM E18 Mapping Forensic Nursing Competencies for Disaster Situations
Thiago Augusto Soares Monteiro da Silva*; Débora Fernanda Haberland; Thais da Silva Kneodler; Alex Coelho da Silva Duarte; Joyce P. Williams, DNP, RN; Alexandre Barbosa de Oliveira

3:00 PM – 3:15 PM E19 The Role of the Forensic Nurse as a New Method of Managing the Quality and Timeliness of Carrying Out the Autopsy
Matteo Antonio A. Sacco, MD*; Isabella Aquila, PhD, MD*; Maria Cristina Verrina, MD; Luca Calanna, MD; Martino Maesani, MD; Elisa Folino; Marinika Salasco; Pietro Tarzia; Alessandro Pasquale Tarallo, MD; Pietrantonio Ricci, PhD, MD

*Presenting Author
Friday

Multidisciplinary Session: Engineering & Applied Sciences and Forensic Nursing Science

Moderator: Kathy Bell

9:00 AM – 9:15 AM  D38  Bone Injuries in Nursing Home Residents
                    David Pienkowski, PhD, MBA*

9:15 AM – 9:30 AM  E20  Crowd Surge Triggers and Mitigating Factors
                    David A. Williams, DDS, MPH*; Joyce P. Williams, DNP, RN

9:30 AM – 9:45 AM  D39  Electrical Injury Causes: Part 2—Evidence Retention
                    Helmut G. Brosz, BASc, DBA*

9:45 AM – 10:00 AM E21  Interdisciplinary Research Related to Sexual Violence and Dating App Usage
                    Emma Mae Walquist, BS*; Douglas Zytka; Michele Parkhill; Melissa M. McDonald, PhD;
                    Kelly A. Berishaj, DNP, MSN; Wenqi Zheng, MS, BA; Xiangyu Zhou; Dongxiao Zhu

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                          Mechanisms Using Instrumented PMHS
                          John H. Bolte, PhD, MSc*; Amanda M. Agnew, PhD; Yun-Seok Kang, MD

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                      Janean Fossom, BSN*

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                       Adam Goodworth, MS, PhD*; Ciboney Hellenbrand; Charlotte Bloom; Ashley Pitzen

11:00 AM – 11:15 AM  E23  "Compressed Baby Head": A New "Abusive Head Trauma" Entity?
                        Enrica Macorano, MD*; Mattia Gentile; Giandomenico Stellacci; Mariano Manzionna;
                        Stefano Duma, MD; Raffaella Minella; Aldo Di Fazio

                          to Scientifically Prove Seat and Belt Failures
                          Mark C. Pazzi, MS*
Wednesday

Poster Session

11:30 AM – 1:00 PM  **F1**  WITHDRAWN

11:30 AM – 1:00 PM  **F2**  The Determination of Time Since Deposition of Blood Samples Via Alanine Quantification
Estreylla D. Sierra, MS*; Jan Halamek, PhD

11:30 AM – 1:00 PM  **F3**  The Determination of Lead (Pb) in Cosmetic Samples by Graphite Furnace Atomic Absorption Spectrometer (GFAAS)
Kapil Kumar*; Ashok Kumar Jaiswal, PhD; T. Millo

11:30 AM – 1:00 PM  **F4**  Investigating Student Perceptions of Learning in the Flipped Classroom Setting Within a Forensic Science Course
Lacey Victoria Sharman*; Amanda C. Chee-Awai; Tamra Legron-Rodriguez, PhD

11:30 AM – 1:00 PM  **F5**  How Do Kinetic Energy and Firearm-to-Target Distance Influence Fracture Morphology?
Delaney Edwards, MA*; Mariyam I. Isa, PhD

11:30 AM – 1:00 PM  **F6**  Success Rates for Positive Identification Using Multiple Fingerprint Methods in a Mid-South Population
Brittany Wexler, MSc, BSc*; Diana Messer, PhD; Marco Ross, MD; Nathan Gathright

11:30 AM – 1:00 PM  **F7**  Gunshot Defense Wounds: The Need for a Specific Classification
Laura Ambrosi*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Caravetta, DM; Antonio Straface, MD; Biagio Solarino

11:30 AM – 1:00 PM  **F8**  A Raman Spectroscopic Analysis of Drugs in Contaminated Fingermarks: The Effect of Temperature and Time Since Deposition
Mohamed Amin, PhD*; Entesar Al-Hetlani, PhD; Igor K. Lednev, PhD

11:30 AM – 1:00 PM  **F9**  Dating Traumatic Brain Injury With a Dura Mater Immunohistochemical Assay: An Ongoing Study
Marcello Benevento, MD*; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Caravetta, DM; Antonio Straface, MD; Laura Ambrosi; Francesco Merlanti; Biagio Solarino

11:30 AM – 1:00 PM  **F10**  An Evaluation of Explosive Odor Signature Persistence on Training Aid Substrates
Juliet Leslie DeNapoli, BSA*; Paola A. Prada-Tiedemann, PhD

11:30 AM – 1:00 PM  **F11**  The Opioid Revival: A Case Report Where Toxicology Meets Music
Simona Nicoli, DM*; Cristina Caterino, DM; Marcello Benevento, MD; Laura Ambrosi, MD; Antonio Straface, MD; Francesco Caravetta, DM; Biagio Solarino

11:30 AM – 1:00 PM  **F12**  Establishing the Manner of Death: A 3D Reconstruction of a Case of Hanging
Laura Ambrosi*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Caravetta, DM; Antonio Straface, MD; Biagio Solarino

11:30 AM – 1:00 PM  **F13**  Electric Scooter-Related Accidents: A Possible Protective Effect of Helmet Use on Head Injury Severity
Giovanni Aulino, MD*; Silvia Valentini, MD; Marcello covino, MD, PhD; Francesca Cittadini, MD

*Presenting Author
11:30 AM – 1:00 PM  F14  Contention and Restraint: Medicolegal Aspects of a Controversial Practice
Giulia Berneschi, MD*; Carla Occhipinti, MD*; Andrea Costantino, MD; Chiara Toni, MD, PhD; Arianna Baronti, MD; Rebecca Pieretti, MD

11:30 AM – 1:00 PM  F15  “One Ring to Find Them All”: The Potential of Scanning Electron Microscopy (SEM) With Microanalysis/Energy-Dispersive X-Ray Spectroscopy (EDS) in a Murder Suspect Case
Ilaria Maracci, MD*; Naomi Iacoponi, MD*; Julia Lazzari, MD; Andrea Costantino, MD; Luigi Papi, MD; David Forni, MD; Claudia Giaconi, MD; Silvio Chericoni, PhD

11:30 AM – 1:00 PM  F16  “All Women Are Equal, but Some Women Are More Equal Than Others”: The Italian View of Cesarean Section on Maternal Request Between Women’s Self-Determination and Malpractice
Ilaria Maracci, MD*; Arianna Baronti, MD; Federica Spina, MD; Giulia Berneschi, MD*; Matteo Leoni, MD; Marco Di Paolo, MD

11:30 AM – 1:00 PM  F17  The Postmortem Identification of Decomposed Bodies Using Mikrosil™ Fingerprint Impressions
Madeline Rivera, MS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*

11:30 AM – 1:00 PM  F18  Fungal Interaction in Mammalian Decomposition in the New Jersey Pine Barrens
Jacquelyn V. Gross, BS*; Jennifer Oberle, PhD; Jessica Lynne Metcalf, PhD; Kimberlee S. Moran, AB, MSc

11:30 AM – 1:00 PM  F19  Deadly Fettuccine With Bolognese Sauce: A Case of Sudden Death in a Woman Suffering From Achalasia
Luca Tajana, MD; Alessandra Mammana, MD*; Elena Cavriani, MD; Mirella Sabatino, MD; Gianmarco Di Palma, MD; Valeria Prandini, MD; Gaia Tamellini, MD; Domenico De Stradis; Lara Malaspinas, MD; Guinaz T. Javan, PhD; Silvia D. Visinò, MD, PhD; Luca Morini, PhD

11:30 AM – 1:00 PM  F20  The Climate’s Influence on Fingerprint Quality
Timothy Juedes, MFS*; Caitlyn Grotjahn; Jenna Wilson

11:30 AM – 1:00 PM  F21  Investigating the Effect Flipped Classroom Structure Has on Perceived Student Engagement in a Post-Secondary Forensic Science Course
Amanda C. Chee-Awai*; Lacey Victoria Sharman; Tamra Legron-Rodriguez, PhD

11:30 AM – 1:00 PM  F22  Characterizing Flow Cytometry Analysis of Pollen Mixtures
Slun Booppasiri*; Larry Tang, PhD; Jack Trimble; Matthieu Baudelet, PhD; Luz J. Kelley; Alicja Copik

11:30 AM – 1:00 PM  F23  Determining Possible Causality of Inherent Fluorescence in Fingerprint Residue
Brenda Marchetti, MS*; Ismail M. Sebetan, MD, PhD*, Paul Stein, PhD*

11:30 AM – 1:00 PM  F24  The Influence of Handwashing and Handedness on the Fingerprint Microbiome Over Time
Sarah Jackman, BS*; Josep De Alcaraz-Fossoul, PhD

11:30 AM – 1:00 PM  F25  WITHDRAWN

11:30 AM – 1:00 PM  F26  Death Due to Miracle Mineral Solution (MMS)
Sami Souccar*; Juan Carrillo; Brice Hunt, MD

11:30 AM – 1:00 PM  F27  Missing and Murdered Indigenous People: The American Southwest
Sharon K. Moses, PhD*
GENERAL

11:30 AM – 1:00 PM  F28  Is the Famous California Palm Tree a Serial Killer? A Unique Mechanism of Death in Tree Trimming Accidents
Sami Souccar*; Brice Hunt, MD

11:30 AM – 1:00 PM  F29  The Effects of Overlapped Latent Fingermarks on Skin Microbiomes Deposited Over Time
Lauren Welch*; Josep De Alcaraz-Fossoul, PhD

11:30 AM – 1:00 PM  F30  The Use of GIS Mapping to Assist With Forensic Recoveries of Historic Aircraft Crash Sites
Audrey M. Lauerhass*; Tiffany B. Saul, PhD; Adam Fracchia, PhD

11:30 AM – 1:00 PM  F31  The Application of Forensic Genetic Genealogy in Criminal Investigation
Jeff Cheng-Lung Lee*; Wenping Liu

11:30 AM – 1:00 PM  F32  Multidisciplinary Teamwork: The Excavation of a Grave Enshrouded by a Banyan Tree
Denise To, PhD*; Robert Ingraham, MSc; Allison M. Campo, MA; Audrey Scott, PhD

11:30 AM – 1:00 PM  F33  Driving While Intoxicated: Why Are DWI Cases Being Dismissed in New Jersey?
Christopher Dudzik, MA, BS*; Gloria Raise; Amanda Joy O’Connor, BS; Denise Gemmellaro, PhD*

11:30 AM – 1:00 PM  F34  Approaches to Investigating Textile Damage in Stabbing Cases: A Forensic Analysis and Reconstruction
Sotirios Ziogos, BSc, MFSc; Ian R. Dadour, MSc, PhD*; Paola A. Magni, PhD

11:30 AM – 1:00 PM  F35  Unraveling an Unusual Homicide: Asphyxia Due to Obstruction of Respiratory Orifices in a Subject With Acute Benzodiazepine and Tricyclic Antidepressant Intoxication
Arianna Rifirotto, MD*; Valeria Giglio, MD; Dario Scaglione, MD; Vanessa Milazzo, MD; Roberto Buscemi; Valentina Triolo, MD; Manfredi Rubino, MD; Antonina Argo

11:30 AM – 1:00 PM  F36  Staphylococcus Aureus Strikes Again! Never Underestimate a Furunculous Infection: An Autopsy Case Report of Acute Bacterial Spinal Meningitis in a Young Female
Fabio Del Duca, MD*; Paola Santoro, MD*; Giacomo Visi, MD*; Gabriele Napoletano, MD*; Federica Spina, MD*; Alessandra De Matteis, MD; Aniello Maiese, MD

11:30 AM – 1:00 PM  F37  Closing Cases and Reducing Risk: A New Training Curriculum for Law Enforcement on Conducting Investigations With Transgender Crime Victims
Robert Eckstein, PsyD*; Amy Michael, PhD

Thursday—Session I

Face and Feet

 Moderator: Bryan Brendley, PhD

8:30 AM – 8:45 AM  F38  Emerging Paradigms in Forensic Facial Comparison Through Artificial Intelligence
Oscar Ibáñez Panizo, PhD*; Enrique Bermejo, PhD; Alejandro Manzanares; Antonio David Villegas, MSc, BS; Andrea Valsecchi, PhD

8:45 AM – 9:00 AM  F39  The Reliability of the Viola-Jones Algorithm for Detecting Pose Variant Facial Features
Lovepreet Kaur, MSc*; Mukesh Kumar K. Thakar, PhD; Navdeep Goel, PhD

9:00 AM – 9:15 AM  F40  The Mentioned but Not Explained: The Blend of Art and Science in Manual Forensic Facial Reconstruction
Daniel Marion, MFA, PhD*

*Presenting Author
### GENERAL

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<tr>
<td>9:15 AM – 9:30 AM</td>
<td>F41</td>
<td>An Update on the Status of Facial Identification</td>
<td>Steven L. Johnson, BS*</td>
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<tr>
<td>9:30 AM – 9:45 AM</td>
<td>F42</td>
<td>Forensic Podiatry: An Important Discipline in the Analysis of Feet, Footprints, Gait, and Trackways</td>
<td>Kewal Krishan, PhD*</td>
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<td>9:45 AM – 10:00 AM</td>
<td>F43</td>
<td>Further Observations Into the Linking of Footprints With Footwear-Forensic Implications and Interpretations</td>
<td>Kewal Krishan, PhD*</td>
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<tr>
<td>10:00 AM – 10:15 AM</td>
<td>F44</td>
<td>The Casting of Shallow Footwear Impressions: A Field Test of Comparisons Between 3D Photographing and 3D Laser Printing Methods</td>
<td>John Z. Wang, PhD*</td>
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<td>10:15 AM – 10:30 AM</td>
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### COVID and Humanitarian

**Moderator: Tom Bevel, MA**

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<tr>
<td>10:30 AM – 10:45 AM</td>
<td>F45</td>
<td>Selected Trends From COVID-19 Prospective Data Collection at the Tarrant County Medical Examiner’s Office</td>
<td>Lilly G. Crowns, BS*; Stacey Murthy, MD; John Briggs</td>
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<tr>
<td>10:45 AM – 11:00 AM</td>
<td>F46</td>
<td>Predictive Models for the Diagnosis and Prognosis of COVID-19: Tools for Assessing the Evaluation of Health Responsibility in a Case of a “Culpable Epidemic”</td>
<td>Domenicantonio Iannello, MD*; Gennaro Baldino, MD*; Concetta Fenga; Antonio Cascio; Francesco Corica; Carmelo Nobile; Rocco Pistorino; Pietro Tarzia; Cristina Genovese, PhD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD</td>
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<tr>
<td>11:00 AM – 11:15 AM</td>
<td>F47</td>
<td>Humanitarian Forensics: A Call to the Scientific Community From the International Committee of the Red Cross</td>
<td>Pierre Guyomarct, PhD*</td>
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<tr>
<td>11:15 AM – 11:30 AM</td>
<td>F48</td>
<td>Asylum Seekers and Victims of Torture in Sicily, Italy: The Role of Forensic Medicine in the Mediterranean Migratory Crisis</td>
<td>Giuseppe Davide Albano*; Corinne La Spina; Valeria Tullio; Mauro Midiri; Stefania Zerbo; Antonina Argo</td>
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<tr>
<td>11:30 AM – 11:45 AM</td>
<td>F49</td>
<td>Multiband Imaging Methods in Humanitarian Forensic Medicine to Enhance the Readability of Documents From Mediterranean Shipwreck Victims</td>
<td>Lorenzo Franceschetti, MD, PhD*; Marco Gargano, PhD; Andrea Palamenghi, BSc; Debora Mazzarelli, BSc; Martina Cabrini, BSc; Alice Plutino, BSc; Cristina Cattaneo, MD, PhD</td>
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<tr>
<td>11:45 AM – 12:00 PM</td>
<td>F50</td>
<td>Breaking Barriers: Empowering Forensic Dermatologists in Asylum Applications Through Identifying Evidence of Torture in Ethnic Skin Variations</td>
<td>Mishaal Fatima*; Sajeel A. Shah, PhD; Nikolas P. Lemos, PhD</td>
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<tr>
<td>12:00 PM – 12:15 PM</td>
<td>F51</td>
<td>The Contribution of Immunohistochemistry in Assessing Cruelty as an Aggravating Factor of Homicide</td>
<td>Marcello Seligardi*; Edda E. Guareschi, MD, PhD; Laura Donato; Francesco Calabrò; Rossana Cecchi, MD</td>
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GENERAL

Genetics and the Elderly

Moderator: Eugenio Alladio, PhD

1:45 PM – 2:00 PM  F52  A Probabilistic Genotyping Analysis of Touch DNA and Transfer Evidence
Charis Ann Hickey, BS*; Amy K. Smith, MS; Kelly J. Beatty, MSFS; Eric Miller, MS

2:00 PM – 2:15 PM  F53  How to Talk to Your Genetic Genealogist: The Language of Kinship
Tynan Peterson, MA, BFA*; Melanie Thomas Armstrong, BA

2:15 PM – 2:30 PM  F54  Forensic Genetic Genealogy: Not Just for Solving Homicides
Michelle S. Clark, BS, MS*; James R. Gill, MD

2:30 PM – 2:45 PM  F55  Is There a Lesser-Value Type of Violence? Older People Abuse: “The Silence of the Lambs”
Ludovica Busillo, MD; Gaetano Di Donna, MD*; Carmen Imma Aquino, MD;
Mariagrazia Marisei, MD; Anita Sammarco, MD; Pierpaolo Di Lorenzo, MD;
Emanuele Capasso, MD; Massimo Niola, PhD

2:45 PM – 3:00 PM  F56  A Differential Diagnosis Between Elder Neglect and the Pathophysiology of Aging:
Medicolegal Aspects From a Case of Death by Hypothermia
Lorenzo Franceschetti, MD, PhD*; Ilaria Tarozzi, MD; Valentina Bugelli, PhD, MD

3:00 PM – 3:15 PM  F57  Caregiver Burden and Elder Abuse: Medicolegal Perspectives From Two Fatal Cases
Ilaria Tarozzi, MD*; Lorenzo Franceschetti, MD, PhD; Valentina Bugelli, PhD, MD

3:15 PM – 3:30 PM  BREAK

Cold Cases

Moderator: Taylor Lowry, BS, BA

3:30 PM – 3:45 PM  F58  Estimating the Biogeographical Origin of the Unidentified Bodies of the Shipwreck of
April 18, 2015, in the Mediterranean: A Comparison of Genetic and Anthropological
Assessments
Lorenzo Franceschetti, MD, PhD*; Debora Mazzarelli, BSc; Venusia Cortellini, PhD;
Andrea Palamenghi, BSc; Greta Cena, MD; Luca Salvaderi, BSc; Carlo Robino, MD, PhD;
Andrea Verzeletti, MD, PhD; Cristina Cattaneo, MD, PhD

3:45 PM – 4:00 PM  F63  The Unknown Child on the Titanic: Identified! Identified?
Colleen M. Fitzpatrick, PhD*

4:00 PM – 4:15 PM  F59  A Cold Case Homicide Involving Partial Dismembered Human Remains Found in a
Dumpster Resolved by a Three-Decade-Old Complex Diligent Police Investigation
Lakshmanan Sathyavagiswaran, MD*; John Lamberti, BA*; Tamara Momayez

4:15 PM – 4:30 PM  F60  Homicide Motel: Justice Served After Decades of Waiting
Tracy Brisendine, BA*

4:30 PM – 4:45 PM  F61  A Cold Case Homicide Solved "The Old-Fashioned Way" After 37 Years
Beth S. Goodspeed, MS*

4:45 PM – 5:00 PM  F62  Resting in Honored Glory: Identifying the Unknown Soldiers of the Segregated 92nd
Infantry Division in World War II
Traci L. Van Deest, PhD*; Sarah Barksdale, PhD

*Presenting Author
**Thursday—Session II**

**Crime Scenes**

Moderator: Kyle Scherrer, MSFS  
Co-Moderator: Amber Riley, MS

8:30 AM – 8:45 AM  **F64**  Establishing the Identity of the Dead Through a Complimentary Missing Person Registry With Unidentified Dead Bodies in the Indian Context: An Ethical Imperative  
*Nasir Muhammad Ahmad, MSc, PhD*; *Vina R. Vaswani, MD, PhD*

8:45 AM – 9:00 AM  **F65**  Forensic Archaeology Methodologies Developed in Direct Ratio to Practice and Experience: Innovative Drilling Technique for the Well Excavations of the Committee on Missing Persons in Cyprus  
*Erge Yurtdas, MA*; *Maria Michael, MA, PhD*; *Demet Karşılı, MA*; *Maria Achilleos, PhD, MA*

9:00 AM – 9:15 AM  **F66**  Exercising Due Diligence: Utilizing Novel Multidisciplinary Methods in the Recovery of Skeletal Remains  
*Brett E. Harding, MBA*; *Jessica Macdonald, BS, MA*; *Zackary Rushton, BA*; *Ryan Belanger, BS*; *Amethyst Crowe, BA*; *Chiara Mancini, DO*

9:15 AM – 9:30 AM  **F67**  Challenges in Identification and Repatriation of Anjala (India) Skeletal Remains: A Humanitarian Forensic Concern  
*Jagmahender Singh Sehrawat, PhD*

9:30 AM – 9:45 AM  **F68**  The Ethics of Dead Bodies/Body Remains Following Disasters: A Qualitative Study  
*Vina R. Vaswani, MD, PhD*; *Bert Gordijn, PhD*

9:45 AM – 10:00 AM  **F69**  Surfing the Dark Web  
*Kim Fallon, BS*

10:00 AM – 10:15 AM  **F70**  Eye Tracking in Evaluating the Decision-Making of Crime Scene Investigators: A Pilot Study  
*Xiaotang Guo, MSc, MRes*; *Sherry Nakhaeizadeh, PhD*; *David Lagnado, MSc, PhD*

10:15 AM – 10:30 AM  **BREAK**

**Dogs, Fire, and Detection**

Moderator: Francesco Sessa, PhD, MS

10:30 AM – 10:45 AM  **F71**  The Road to Standard Development: An Update From Dogs and Sensors  
*Paola A. Prada-Tiedemann, PhD*; *Sara S. Perry, BS*; *Kenneth G. Furton, PhD*

10:45 AM – 11:00 AM  **F72**  Human Remains Detection Dogs and Residual Odor  
*Melissa A. Connor, PhD*; *Alexander J. Smith, BA*; *Georgia Swelstad, BS*

11:00 AM – 11:15 AM  **F73**  A Multidisciplinary Approach to K-9 Human Remains Detection: The Integration of Medical Examiners, Forensic Anthropologists, and Medicolegal Investigators With the K-9 Team  
*Michele S. Slone, MD*; *Angela Soler, PhD*; *Jennifer K. Odien, PhD*; *Justin Z. Goldstein, MA*; *Bradley J. Adams, PhD*; *Nicholas W. Schultz, BS*; *Dennis Cavalli, MPH*; *Scott Mateyaschuk*

11:15 AM – 11:30 AM  **F74**  The Effect of Compressed Air Foam on the Detection of Ignitable Liquid Residues on Fire Debris Samples  
*Victor Omondi, BSc, MSc*
GENERAL

11:30 AM – 11:45 AM  F75  The Impacts of Thermocouple Insulation Failure on the Accuracy of Temperature Measurement Data in Forensic Fire-Death Scenarios  
David Silveira, MS*; Ashley Kendell, PhD; Beth Shook, PhD

11:45 AM – 12:00 PM  F76  In Situ Detection of Gunshot Residue on Fabric Using Attenuated Total Reflectance/ Fourier Transform Infrared Spectroscopy  
Igor K. Lednev, PhD*

12:00 PM – 12:15 PM  F77  An Exploratory Study of 3D Fused Deposition Modeling (FDM) and Polylactic Acid (PLA+) Filament Deposition as Toolmark Signatures for Common Source Comparison and Identification  
Steven Pavlovich, RMT*

12:15 PM – 1:00 PM  BREAK

Birds, Water, Loved Ones, and Convictions

Moderator: Cliff Akiyama, MPH, MA  
Co-Moderator: Imron Ramos, MFS

1:30 PM – 1:45 PM  F78  Fatal Sexual Assaults Toward Animals (Birds) and Bestiality  
Gilles P. Tournel, MD, PhD*; Bérengère Dautreme; Audrey Servoise; Elise Hardoin; Benjamin Charroy; Lisa Gouellain; Albane Guigne

1:45 PM – 2:00 PM  F79  A Review of Global Egg and Nestling Theft and Collection Practices  
Kali E. Goding, MS*; Ngaio L. Richards, PhD, MSc; Fabio Oldoni, PhD; Susan C. Underkoffler

2:00 PM – 2:15 PM  F80  A Retrospective Study of Displacement and Recovery Patterns for Water Fatalities in British Columbia, Canada  
Britny A. Martlin, BA, MSc*; Lynne S. Bell, MSc, PhD

2:15 PM – 2:30 PM  F81  The Importance of Proper Underwater Forensics Investigation  
Rhonda J. Moniz*

2:30 PM – 2:45 PM  F82  Intimate Partner Violence-Related Strangulation (IPVRS)  
Katherine M. Brown, PhD*; Cortney A. Franklin, PhD; Tara O. Shelley, PhD

2:45 PM – 3:00 PM  F83  Sudden Infant Death Syndrome and the Risk Factors of an Unsecure Sleep Environment  
Hind Abouzahir, MD, PhD*

3:00 PM – 3:15 PM  F84  Examining Youth Gangs From a Trauma Exposure Perspective  
Cliff Akiyama, MPH, MA*

3:15 PM – 3:30 PM  F85  An Assessment of the Reliability of Subjective Pattern Evidence Disciplines Based on Evidence From Wrongful Convictions  
John Morgan*

3:30 PM – 3:45 PM  F86  Wrongful Convictions and Jurisprudence of DNA Forensics: An Indian Scenario  
Garima Chaudhary, PhD*

*Presenting Author
## Friday

### Poster Session

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<th>Authors</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F87</td>
<td>A Quiet Place: A Case of a Double Homicide in a Corn Field</td>
<td>Sofia Bodini, MD; Pietro Clemente C. Salmoirago, MD*; Domenico De Stradis; Elena Cavriani, MD; Laura Scotti, MD; Caterina Pelligrino, MD; Silvia D. Visonà, MD, PhD; Luca Morini, PhD; Matteo Moretti, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F88</td>
<td>Forensic Sexual and Gender-Based Violence Prevention and Response: A Community-Based Approach Pilot</td>
<td>Ibrahim Jibril Adem*; Lemi Tolu, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F89</td>
<td>Forensic Medicine Practices in Family Medicine in Turkey</td>
<td>Gozde Gokten Kalkanli*; Ilkay Kalkanli; Selçuk Çetin</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F90</td>
<td>An Unusual Plastic Bag Suffocation Case: Insights From a Comprehensive Forensic Investigation</td>
<td>Fausto Licciardello, MD*; Mattia Palmeri, MD; Mario Spano, MD; Walter Pintigaro, MD; Manfredi Rubino, MD; Ginevra Malta, MD, PHF; Valentina Triolo, MD; Antonina Argo</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F91</td>
<td>Filling the Gaps of Medical Records: The Hidden Truth Behind an ABO-Incompatible Transfusion</td>
<td>Gabriele Licciardello, MD*; Francesco Sessa, MS, PhD; Monica Salerno, MD; Cristoforo Pomara</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F92</td>
<td>Unboxing Grandma—PMI Estimation in an Advanced State of Decomposition: A Case Report</td>
<td>Gabriele Licciardello, MD*; Andrea Vittorio Maria Failla, MD; Marco Torrisi, MD; Fabrizio Vanaria</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F93</td>
<td>Incised Wounds—Homicide or Suicide? A Case Study</td>
<td>Gabriele Licciardello, MD*; Andrea Vittorio Maria Failla, MD; Pietro Zuccarello, PhD; Maria Paola Pinacchi; Giuseppe Li Rosi, MD; Monica Salerno, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F94</td>
<td>The Quantitative and Qualitative Analysis of Dye in Fentanyl Tablets Via Ultraviolet Visible Spectroscopy: A Forensic Approach</td>
<td>Charley K. Mitchell, BS*; Laura Jones; Charlotte Corbett; Jonathon Dumke; Kristin Ceniccola-Campos</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F95</td>
<td>Traumatic Brain Injury After Defensive Ball Launcher Use in Law Enforcement Operations</td>
<td>Isabelle, MD*; Alain Miras, PhD, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F96</td>
<td>Seasonal Soil Microbial Succession During Carrion Decomposition: Applications for Body Translocation and Postmortem Interval Estimation</td>
<td>Kelly Waters*; Anthony Grigsby; Bethany Mikles, BSc, MS; Jennifer L. Pechal, PhD; M. Eric Benbow, BS, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F97</td>
<td>An Unusual Accident at Work: Fatally Hit by a Chain</td>
<td>Laura Ambrosi*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Carravetta, DM; Antonio Straface, MD; Biagio Solarino</td>
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11:30 AM – 1:00 PM  F98  The Evidence for Prosecution of Atrocity Crimes in Ukraine During the Ukraine-Russia Conflict: 2022–Present  
Rhianna van Riel-Jameson, BSc*; Sajeel A. Shah, PhD; Nikolas P. Lemos, PhD

11:30 AM – 1:00 PM  F99  Cannabinoid Hyperemesis Syndrome-Related Death: An Emerging Public Health Threat  
Fatima Al-Baqali, MD*

11:30 AM – 1:00 PM  F100  Unlocking New Insights Into Inorganic Gunshot Residue Analysis Through Single Particle Inductively Coupled Plasma Time-of-Flight Mass Spectrometry (spICP-MS)  
Rodrigo D. Heringer*; James Ranville, MS, PhD; Olga Meili

11:30 AM – 1:00 PM  F101  Understanding Volatile Odor Signatures From Entomological Samples  
Ana Zoe Monogan, BS*; Paola A. Prada-Tiedemann, PhD; Joshua Smith, PhD

11:30 AM – 1:00 PM  F102  The Findings of Criminal Judgements Related to Driving Under the Influence of Drugs During the 2018–2022 Period in Taiwan: Using District Courts as Examples  
Chu-An Yang*; Shuo-Ting Fang; Hong-Bin Wang; Chih-Yun Tseng

11:30 AM – 1:00 PM  F103  An Analysis of Inorganic Gunshot Residue (IGSR) Nanoparticles by Conventional and Single Particle Inductively Coupled Plasma/Mass Spectrometry (spICP-MS) Using Design of Experiments (DOE)  
Rodrigo D. Heringer*; Henrique José Ferraz Fabrino, PhD; Rogerio Araujo Lordeiro, MS

11:30 AM – 1:00 PM  F104  Maxillary Sinus Dimensions as Predictive Markers for Age and Sex in Northwest Indian Subjects: An MRI-Based Study  
Shubham Thakur, PhD, MSc*; Jagmahender Singh Sehrawat, PhD

11:30 AM – 1:00 PM  F105  A New Frontier in Postmortem Interval (PMI) Estimation: The Assessment of Yellow Bone Marrow Changes Using Dual-Energy Dual-Layer (DECT)  
Vincenzo Cianci*; Cristina Mondello, MD*; Gianluca Tripodi; Alessio Asmundo, MD; Michele Gaeta; Antonino Germana; Maria Cristina Guerrera, Tommaso D’Angelo; Giorgio Ascenti; Annalisa Cracò; Patrizia Gualniera; Lorenzo Tornese; Elena Forzese, MD; Gennaro Baldino, MD; Elvira Ventura Spagnolo; Daniela Sapienza*

11:30 AM – 1:00 PM  F106  The Detection of the Yellow Fever Virus in Human Remains Using Mass Spectrometry-Based Protein Analysis of Dental Pulp  
Kyra Miller, BS*; Kimberlee S. Moran, MSc; Carla Cugini

11:30 AM – 1:00 PM  F107  The Challenges and Scope of Iris Biometrics in Forensic Science: A Systematic Review  
Sushil Bhatt, Moptom*; Jagmahender Singh Sehrawat, PhD

11:30 AM – 1:00 PM  F108  Child Sexual Abuses in Chandigarh, India: Dimensions and Causes  
Jagmahender Singh Sehrawat, PhD*

11:30 AM – 1:00 PM  F109  Self-Strangulation Using Electrical Cable Ties: A Case Report and Literature Review  
Andrea Cioffi, MD*; Camilla Cecanneccia, MD*; Benedetta Baldari, MD*; Claudia Angela Damato, MD; Isabella Di Marzo, MD; Vittorio Simona, MS

11:30 AM – 1:00 PM  F110  Fatal Systemic Aspergillosis in a Puerpera: A Rare Case Report and Review of the Literature  
Gennaro Baldino, MD*; Giovanni Bartoloni; Antonio Cascio; Simona Pellicano, MD; Giorgia Burrascano, MD*; Cristina Mondello, MD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD*

*Presenting Author
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F111</td>
<td>Almost to Lose Your Heads: A Case Series of Accidental Internal Decapitation</td>
<td>Andrea Cioffi, MD*; Camilla Cecanecchichia, MD*; Benedetta Baldari, MD*; Cappitelli Jeannet, MD; Vittorio Simona, MS</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F112</td>
<td>The Contribution of Forensic Sciences in the Study and Monitoring of Mycotoxin Levels for the Protection of Public Health</td>
<td>Matteo Antonio A. Sacco, MD*; Cristina Juan, PhD; Ana Juan Garcia, PhD; Luca Calanna, MD*; Maria Cristina Verrina, MD*; Santo Gratteri, PhD, MD; Isabella Aquila, PhD, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F113</td>
<td>Human Body Dissection and Donation for Research Purposes: An Overview of Current Legislation in European Countries</td>
<td>Camilla Cecanecchichia, MD*; Vittorio Simona, MS*; Andrea Cioffi, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F114</td>
<td>The Concealment of Bodies by Charring: A Case Series and Multidisciplinary Approach</td>
<td>Gennaro Baldino, MD*; Cataldo Raffino, MD; Giorgia Burrascano, MD*; Cristina Mondello, MD; Patrizia Gualniera; Daniela Sapienza, MD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F115</td>
<td>A Multidisciplinary Forensic Approach in Two Complex Cold Casees and a Review of the Literature</td>
<td>Gennaro Baldino, MD*; Daniela Sapienza, MD; Stefano Vanin; Michele Gaeta; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F116</td>
<td>“I Can’t Find the Remote”: The Ability to Act After a Single Gunshot Wound to the Head</td>
<td>Luca Tomassini*; Manta Anna Maria, MD*; Daniele Paolini, MD; Petrasso Pia Eugenia Ylenia, MD; Costantino Ciallella, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F117</td>
<td>The Forensic Point of View of the Serial Murders at the Holmes’ Labyrinth Hotel</td>
<td>Matteo Antonio A. Sacco, MD*; Palmo Tavernese; Luca Calanna, MD*; Maria Cristina Verrina, MD; Valerio Riccardo Aquila; Wandamaria Mazzuca*; Elisa Folino; Marinika Salasco; Serena Coda; Santo Gratteri, PhD, MD; Isabella Aquila, PhD, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F118</td>
<td>Deaths Due to Suicide by Falling From Bridges: The Role of Architectural Barriers and Video Surveillance Systems</td>
<td>Angela Carbone, MD; Matteo Antonio A. Sacco, MD*; Maria Cristina Verrina, MD; Luca Calanna, MD*; Saverio Gualtieri, MD; Giulio Pulpito, MD; Roberto Raffaele*; Wandamaria Mazzuca*; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F119</td>
<td>The Role of Patient Management in Nursing Homes in the Genesis of Death: Critical Issues in Rehabilitation Programs and Medicolegal Liability Profiles</td>
<td>Luca Calanna, MD*; Matteo Antonio A. Sacco, MD*; Pierluigi Coscarelli, MD; Maria Cristina Verrina, MD*; Antonio Pallante, MD; Roberto Raffaele*; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F120</td>
<td>Intrafamilial Homicide: A Series of Cases From Southern Italy</td>
<td>Alessandro Feola, MD, PhD*; Mariavictoria De Simone, MD; Filomena Casella, MD; Carmen Sementa, MD; Pasquale Giugliano, MD; Alfonso Maiellaro, MD; Omero Pinto, MD; Carlo Pietro Campobasso, MD, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F121</td>
<td>To Kill or to Be Killed—A Differential Diagnosis in Sharp Force Injuries to the Neck: A Case Series</td>
<td>Gianluca Piras, MD*; Manta Anna Maria, MD*; Vittorio Simona, MS*; Benedetta Baldari, MD*; Luigi Cipolloni, MD*</td>
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GENERAL

11:30 AM – 1:00 PM  F122  The Most Dangerous Games: A Ten-Year Retrospective Review of Homicidal Deaths Associated With Dice and Domino Games in Shelby County, Tennessee
Lyle William Christiansen, MD*; Danielle Harrell, DO; Erica Curry, MD

11:30 AM – 1:00 PM  F123  Artificial Intelligence (AI) -Based Automated Facial Recognition Systems and Contributions of Cone-Beam Computed Tomographs (CBCTs)
Jagmahender Singh Sehrawat, PhD*; Deeksha Sankhyan; Shubham Thakur, PhD, MSc

11:30 AM – 1:00 PM  F124  Do Gender, Age, Body Mass Index, and Height Affect Eye Biometrics in North Indian Adults?
Sushil Bhatt, Moptom*; Jagmahender Singh Sehrawat, PhD

11:30 AM – 1:00 PM  F125  Understanding the Crisis of the Persons Reported Missing in East Tennessee
Kamar Afra*; Liam Tran, PhD

11:30 AM – 1:00 PM  F126  Fatal Entrapment Under a Lift-Up Storage Bed: A Rare Case of Accidental Death by Positional Asphyxia
Andrea Cioffi, MD*; Camilla Cecannecchia, MD*; Solenne Miriam, MD; Milone Valentina, MD; Benedetta Baldari, MD*

Friday—Session I

Medicolegal Death Investigations

Moderator: Emily Ditto, BA

8:30 AM – 8:45 AM  F127  Ready Investigator One: The Use of Computer-Based Simulation Games for Medicolegal Investigation Training and Education
Jennifer E. Dierksen, MD*; Kolby J. Spiker, MS; Marissa B. Valencia; Deanna A. Oleske, MD

8:45 AM – 9:00 AM  F128  Safety Considerations for Medicolegal Death Investigators
Taylor Lowry, BA, BS*

9:00 AM – 9:15 AM  F129  Medicolegal Death Investigation: Organizational Climate and Job-Related Stress
Julie A. Howe, MBA*; Steve Clark, PhD*; Amy M. Hawes, MD

9:15 AM – 9:30 AM  F130  Death Investigation: Factors Associated With Scene Investigation and Autopsy Completion
Jennifer R. Snippen, PhD*

9:30 AM – 9:45 AM  F131  Medicolegal Death Investigation Data Modernization
Margaret Warner, PhD*

9:45 AM – 10:00 AM  F132  Medicolegal Death Investigations: Interactive Mapping of Key Data and Organizations
Nelson A. Santos, MPA, BA*; Jennifer R. Snippen, PhD*; Jeri D. Ropero-Miller, PhD

10:00 AM – 10:15 AM  F133  Infrastructure-Related Insights About the Medicolegal Death Investigation Community From the Bureau of Justice Statistics’ (BJS) Census of Medical Examiner and Coroner Offices (CMEC)
Kelly Keyes, BS*; Kathryn E. Greernwell, BA; Hope M. Smiley-McDonald, PhD; Connor Brooks, MSc, MA; Heather G. Meier, BS; Jeri D. Ropero-Miller, PhD

10:15 AM – 10:30 AM  BREAK
### GENERAL

**Medicolegal Death Investigations and Labs**

**Moderator: Mark Goff, BA**

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<tr>
<td>10:30 AM – 10:45 AM</td>
<td>F134</td>
<td>Standards Development Activities in Medicolegal Death Investigation, Including Disaster Victim Identification</td>
<td>Kelly Keyes, BS*; Michelle Rippy, MFS, EdD</td>
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<td>10:45 AM – 11:00 AM</td>
<td>F135</td>
<td>Fostering the Role of Forensic Epidemiologists in Medical Examiner and Coroner Offices: A Collaborative Partnership for Enhanced Public Health Response</td>
<td>Abigail J. Grande, BS, MPH*; Sarah Lathrop, DVM, PhD; Olufemi Ajumobi, PhD; Manreet Bhullar, MPH; Megan K. Broekemeier, MPH; Myles D. Davenport, MPH; Yang H. Martin, MS; Mojde Mir, MPH; Michael J. Staley, PhD; Kimberly Repp, PhD</td>
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<tr>
<td>11:00 AM – 11:15 AM</td>
<td>F136</td>
<td>Modern Morgue Design: How Current Architecture and Technology Help Mortuary Personnel Do Their Job</td>
<td>Denise C. Murmann, DDS*</td>
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<td>11:30 AM – 11:45 AM</td>
<td>F138</td>
<td>Crime Laboratory Quality Assurance Insights From the 2020 Census of Publicly Funded Forensic Crime Laboratories</td>
<td>Jeri D. Ropero-Miller, PhD*; Hope M. Smiley-McDonald, PhD; Connor Brooks, MSc, MA; Erin P. Forry, MS</td>
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<tr>
<td>11:45 AM – 12:00 PM</td>
<td>F139</td>
<td>Building Laboratory Infrastructure—Recent Findings From the Bureau of Justice Statistics’ 2020 Census of Publicly Funded Forensic Crime Laboratories</td>
<td>Connor Brooks, MSc, MA*; Hope M. Smiley-McDonald, PhD; Jeri D. Ropero-Miller, PhD; Kathryn E. Greernwell, BA</td>
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**12:00 PM – 1:30 PM**

**BREAK**

**Case Studies I**

**Moderator: Erin Worrell, BSc**

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<tr>
<td>1:30 PM – 1:45 PM</td>
<td>F140</td>
<td>The Search for Collateral Deaths Derived From the Events of the 1921 Tulsa Race Massacre</td>
<td>Phoebe R. Stubblefield, PhD*; Angela Berg, MA, RN; Robert B. Pickering, PhD</td>
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<tr>
<td>1:45 PM – 2:00 PM</td>
<td>F141</td>
<td>The Fernanda Maciel Case: The Results of Forensic Reconstruction</td>
<td>Carlos A. Gutierrez, PhD, MEd*</td>
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<td>2:00 PM – 2:15 PM</td>
<td>F142</td>
<td>Trailside Murder: A Random, Vicious Attack</td>
<td>Kelsie Bryand, MS, BA*; Andra Lewis-Krick, PhD</td>
</tr>
<tr>
<td>2:15 PM – 2:30 PM</td>
<td>F143</td>
<td>Hanged in the Window of His House: An Accidental Hanging Clarified Only After a Late Scene Examination</td>
<td>Barbara Iga Smyk, DM*; Cristina Cordeiro; Joao Pinheiro, MD, PhD</td>
</tr>
<tr>
<td>2:30 PM – 2:45 PM</td>
<td>F144</td>
<td>A Case Study: Parallels of Intentionally Inflicted Blunt Force Trauma and Blunt Force Trauma in Motor Vehicle Collisions (MVCs)</td>
<td>Emily Ditto, BA*; Brett Bulington, EMT, MDI*; Carrie Costello, MS</td>
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*Presenting Author
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2:45 PM – 3:00 PM  F145  The Occurrence of Natural Deaths in Motor Vehicle Collisions: A Case Study  
Emily Ditto, BA*; Carrie Costello, MS

Justin Z. Goldstein, MA*; Jeremy A. Simmons, MS; Bradley J. Adams, PhD

3:15 PM – 3:30 PM  BREAK

Case Studies II

Moderator: TBD

3:30 PM – 3:45 PM  F147  The Secret Life of Dorothy  
Melanie Thomas Armstrong, BA*

3:45 PM – 4:00 PM  F148  1...2...3... Baby Deaths: A Case Involving One Common Denominator  
Anita Marie Roman*

4:00 PM – 4:15 PM  F149  Suicidal Decapitation: Bizarre Ingenuity  
Stacey L. Chepren, MFS, MSc*

4:15 PM – 4:30 PM  F150  Beware of People With Pens in Shirt Pockets and Walking With Canes: Regarding Two Medicolegal Autopsies  
Fabrice Dedouit, MD, PhD*; Agathe Bascou, MD; Ryan Toutin, MD; Anthony Ramirez, MD; Manuela Turkiewicz, MD; Frederic Savall, MD, PhD; Fatima Zohra Mokrane, MD, PhD; Norbert Telmon, MD, PhD

4:30 PM – 4:45 PM  F151  A Story With a Not-So-Ferret-ale Ending: What to Do When OBTI Won’t Work  
Amanda Fitch, MS*

4:45 PM – 5:00 PM  F152  Equestrian Death Investigation Best Practices: An Effort to Support Fatal Rotational Fall Analysis  
Stacey L. Chepren, MFS, MSc*

Friday—Session II

Education I

Moderator: TBD

8:30 AM – 8:45 AM  F153  Does the Delivery Method Determine the Success Rate in an Introduction to Forensic Science Course?  
Claire E. Shepard, MS*

8:45 AM – 9:00 AM  F154  Restructuring the University Forensic Science Seminar: Lessons for New, Current, and Future Instructors  
Joe C. Trevino, MS, BS*; Amanda A. Murray, PhD*

9:00 AM – 9:15 AM  F155  Active Learning in Forensic Biology  
Kristi Bugajski, PhD*

*Presenting Author
### GENERAL

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<th>Time</th>
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<tr>
<td>9:15 AM – 9:30 AM</td>
<td>F156</td>
<td>The Use of Instructional Strategies in Forensics Education: Results From a National Survey of Post-Secondary Forensic Science Educators</td>
<td>Tamra Legron-Rodriguez, PhD*</td>
</tr>
<tr>
<td>9:30 AM – 9:45 AM</td>
<td>F157</td>
<td>Courtroom Testimony Training for Professional and Expert Witnesses Through the Lens of a Laboratory Director—Optional or Mandatory: The Saint Lucia Experience</td>
<td>Fernanda Henry, BSc, MSc*; Alfredo Eugene Walker, MBBS</td>
</tr>
<tr>
<td>9:45 AM – 10:00 AM</td>
<td>F158</td>
<td>Investigating Potential Factors That Can Impact Students’ Professional Identities in Forensic Science</td>
<td>Abigail Castillo*; Cameron Bechard, BS; Tamra Legron-Rodriguez, PhD; Nicole Lapeyrouse, PhD</td>
</tr>
<tr>
<td>10:00 AM – 10:15 AM</td>
<td>F159</td>
<td>Bridging the Gap Between Academia and Police Casework</td>
<td>Sofia Goia*</td>
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<tr>
<td>10:15 AM – 10:30 AM</td>
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### Education II

**Moderator: TBD**

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<th>Time</th>
<th>Session</th>
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<th>Authors</th>
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<tbody>
<tr>
<td>10:45 AM – 11:00 AM</td>
<td>F161</td>
<td>The African Forensic Sciences Academy (AFSA)—Transforming the Forensic Science Landscape in Africa</td>
<td>Antonel Olckers, PhD*; Mehdi Ben Khelil, MD</td>
</tr>
<tr>
<td>11:00 AM – 11:15 AM</td>
<td>F162</td>
<td>An Evaluation of Italian Medical Students’ Attitudes and Knowledge Regarding Forensic Medicine: Could This Course Guide the Student in Choosing the Residency Program?</td>
<td>Giovanni Aulino, MD*; Flavia Beccia, MD; Michele Rega, MD; Chiara Siodambro, MD; Giuseppe Capece, MD; Stefania Boccia, MD; Antonio Lanzone, MD, PhD; Antonio Oliva, PhD</td>
</tr>
<tr>
<td>11:15 AM – 11:30 AM</td>
<td>F163</td>
<td>A Comparative Forensic Education Via a Study-Abroad Approach: Pedagogical Experiences in the United Kingdom, Scotland, and Canada</td>
<td>John Z. Wang, PhD*</td>
</tr>
<tr>
<td>11:30 AM – 11:45 AM</td>
<td>F164</td>
<td>Unveiling Forensic Science Topics for Enhanced Knowledge Discovery</td>
<td>Amir Alipour Yengejeh, MD*; Larry Tang, PhD</td>
</tr>
<tr>
<td>11:45 AM – 12:00 PM</td>
<td>F165</td>
<td>Macro, Meso, Micro: Core Concepts in the Development of Forensic Science</td>
<td>Max M. Houck, PhD*</td>
</tr>
<tr>
<td>12:00 PM – 12:15 PM</td>
<td>F166</td>
<td>Turn RIGHT: A Roadmap to Improving Research and Technology Transition in Forensic Science</td>
<td>Jeri D. Ropero-Miller, PhD*; Rebecca L. Shute, MS*; Gabrielle Elise DiEmma, MS; Cody Sorrell, MS, BA</td>
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<tr>
<td>12:15 PM – 12:30 PM</td>
<td>F167</td>
<td>Detecting Illicit Use of AI and Other Cheating in Forensic Student Submissions: Ensuring Justice for All Student Assignments</td>
<td>Stewart Walker, PhD, BSc*</td>
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<td>12:30 PM – 1:30 PM</td>
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Standards

Moderator: TBD

1:30 PM – 1:45 PM  F168  The National Institute of Justice Research and Development Program
Lucas W. Zarwell, MFS*

1:45 PM – 2:00 PM  F169  Mass Fatality Response and Disaster Infrastructure Among the Nation’s Medical Examiner and Coroner Offices: Data From the 2018 CMEC
Micaela A. Ascolese, BA*; Kelly Keyes, BS; Jeri D. Roper-Miller, PhD; Sean Wire, ABD; Hope M. Smiley-McDonald, PhD

2:00 PM – 2:15 PM  F170  Forensic Science Standards: A Look at Conformity Assessment and Implementation Models in the United States and Abroad
Allison Getz, MS*; Karen K. Reczek*

2:15 PM – 2:30 PM  F171  First "One Stop" Sexual Assault Center in Turkey
Sotirios Kalfoglou*; Aslı Ofluoğlu; Zehra Alara Kaplan; Ersi Abaci Kalfoglou

2:30 PM – 2:45 PM  F172  Challenges and Solutions for the Implementation of Standards in the Non-Traditional Forensic Setting
Vincent J. Desiderio, MS*; Steven L. Johnson, BS*; John Paul Jones, BS, MBA; Allison Getz, MS; Mark D. Stolorow, MS, MBA

2:45 PM – 3:00 PM  F173  Reporting on Ethics Committee Approval in Cadaveric-Based Research Publications: An Update of a Five-Year Study
Nasir Muhammad Ahmad, MSc, PhD*; Vina R. Vaswani, MD, PhD

3:00 PM – 3:15 PM  F174  Current Hiring Requirements and Expectations in Forensic Science: Considerations for FEPAC, OSAC, ASTM, and Employers
Joe C. Trevino, MS, BS*

3:15 PM – 3:30 PM  F175  There Are 16,000 Predatory Journals: A Practical Guide to Identifying and Avoiding Deceptive Publications
Jeff Teitelbaum, MD*; Gerald LaPorte, MSFS

3:30 PM – 3:45 PM  F176  Artificial Intelligence, the Law, and Forensic Science: New Scenarios and Ethical Implications
Giuseppina Seppini, MSN*; Iolanda Ippolito, MPA

3:30 PM – 3:45 PM  F177  Suicides in Prison: Fatalities or Predicted Tragedies?
Mauro Midiri, MD*; Giuliana Malandrino, MD; Giovanni Scalzo, MD; Chiara Rizzo, MD; Daniele Celesia, MD; Marco La Mantia, MD; Chiara Stassi, MD; Valentina Triolo, MD; Stefania Zerbo

*Presenting Author
Thursday

The Relationship Between Forensic Science Standards and Justice

Moderator: Lynn Garcia, JD

8:00 AM – 8:30 AM  G1  The Use of Forensic Science Standards in the Legal Process: An Update
Dana Delger, JD*; John Paul Jones, BS, MBA*

8:30 AM – 9:00 AM  G2  Standards on the OSAC Registry—Improving Justice for All
Mark D. Stolorow, MS, MBA*; Vincent Desiderio, Jr., MSFS*; John Paul Jones, BS, MBA; Allison Getz, MS; Steven L. Johnson, BS

9:00 AM – 9:30 AM  G3  The Benefits of a Coherent System of Forensic Standards: From the Classroom to the Courtroom
Vincent J. Desiderio, MS*; Mark D. Stolorow, MS, MBA*; John Paul Jones, BS, MBA; Allison Getz, MS; Steven L. Johnson, BS

9:30 AM – 10:00 AM  G4  Cross-Examining Experts on Standards and Other Authoritative References
Terry-Dawn Hewitt, JD, LLM*

10:00 AM – 10:15 AM  BREAK

The Critical Roles of Prosecutors and the Judiciary

Moderator: M.J. Menendez, JD  Co-Moderator: Mary Dayton, JD

10:15 AM – 10:45 AM  G5  “Fairness for for All”: A Discussion of the Evolution of Legal Principles and Practical Systems Designed to Ensure Fairness in Forensic Testimony and in the Criminal Justice System as a Whole (this presentation will be given via pre-recorded video)
John Haried, JD*

10:45 AM – 11:15 AM  G6  Using Forensic Science to Speak for a Victim Who Was Unjustly Silenced in Murder
Valeria N. Spencer, JD*

11:15 AM – 11:45 AM  G7  A Critical Re-Examination
Barbara P. Hervey, JD*

11:45 AM – 12:15 PM  G8  Why Judges Won’t Be Gatekeepers
Donald E. Shelton, JD, PhD*

12:15 PM – 1:15 PM  BREAK

Effective Governance and New Resources for Guarding Against Wrongful Conviction

Moderator: Paul Messner, JD  Co-Moderator: Sarah Chu, PhD

1:15 PM – 1:45 PM  G9  Polygraph Testing and Wrongful Conviction
Tania C. Brief*; Lauren Gottesman*
Presenting Author

1:45 PM – 2:15 PM

G10 Are Courts Convicting People in Traffic Accident Cases Based on Questionable Data From Crash Data Recorders?
Peter Alexander, PhD*; Brendan Bourdage, PhD; John Smith, MSEE, PE

2:15 PM – 2:45 PM

G11 Wrongful Convictions Demonstrate the Need for Governance Improvements in Forensic Science
John Morgan*

2:45 PM – 3:00 PM

G12 The National Association of Forensic Science Boards: A Collaborative Effort for State-Level Forensic Oversight
Leigh M. Tomlin, JD*; Lynn Garcia, JD; John Morgan; Marna L. McLendon, JD, MFS

3:00 PM – 3:20 PM

G13 Preparing for Court: The Research Forensic Library as a New Resource for the Forensic Legal Community
Jeff Teitelbaum*; Gerald LaPorte, MSFS

3:20 PM – 3:30 PM

BREAK

Statistical Concepts, Emerging Technologies, and Our Collective Duty to Correct

Moderator: Terri Rosenblatt, JD

3:30 PM – 4:00 PM

G14 The Real Action at Court Has Always Been Activity
Tim Kalafut, PhD*

4:00 PM – 4:30 PM

G15 Presumption of Innocence, Probable Cause, and Prior Probability—Bayes Meets Due Process
Michael J. Salyards, PhD, MFS*

4:30 PM – 5:00 PM

G16 Preventing and Correcting DNA Errors and Wrongful Convictions
Greg Hampikian, PhD*

5:00 PM – 5:30 PM

G17 Forensic Genetic Genealogy and the Court System—Where Are We Going?
Colleen M. Fitzpatrick, PhD*

Friday

Poster Session

11:30 AM – 1:00 PM

G18 The Incidence of Expert Testimony Within Federal Sentences in the Criminal Justice System of Mexico
Fernanda Lopez-Escobedo, PhD*; Zoraida Garcia-Castillo, PhD; Karla I. Vázquez-Barrera, JD; N. Sofia Huerta-Pacheco, PhD

11:30 AM – 1:00 PM

G19 Gender Inequality and Medical Malpractice: A Sneaky Oversight
Julia Lazzari, MD*; Naomi Iacoponi, MD*; Ilaria Maracci, MD; Chiara Casula, MD; Rebecca Pieretti, MD; Arianna Baronti, MD

11:30 AM – 1:00 PM

G20 A Difficult Patient to Frame: An Overview of Critical Issues in the Management of the Psychiatric Patient After the Closure of Judicial Psychiatric Hospitals in Italy
Carla Occhipinti, MD*; Naomi Iacoponi, MD*; Julia Lazzari, MD; Giacomo Visi, MD; Benedetta Nardi, MD

*Presenting Author
### JURISPRUDENCE

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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G21</td>
<td>Post-Conviction DNA Testing: Annual Summary of an Innocence Project and University Collaboration to Identify and Evaluate Post-Conviction Cases</td>
<td>Katherine A. Roberts, PhD*; Paula Mitchell, JD; Paige Mcgrail, JD; Eliza Haney, JD; Ayesha Hussain, JD; Hilary Morman, JD; Mehul Anjaria, BS, MS</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G22</td>
<td>Workplace Violence Against Health Care Workers: An Umbrella Review of Systematic Reviews and Meta-Analyses</td>
<td>Giovanni Aulino, MD*; Flavia Beccia, MD; Maria Francesca Rossi, MD; Carlotta Amantea, MD; Francesca Cittadini, PhD; Antonio Oliva, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G23</td>
<td>The Positive Impact of Clinical Forensic Medicine Units on Profiles of Medicolegal Cases for Insight and Reviewing Strategies to Plan Against Crime</td>
<td>Rajender Kumar, MBBS, MD*; Mukta Kumar, MBBS, MD*; Munish Sharma, MBBS MD; Umesh Modi, MBBS, MS; Nitika Saini, MBBS, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G24</td>
<td>The Impact of Post-Traumatic Stress Disorder (PTSD) on Those Seeking Asylum</td>
<td>Hasna M. Sheikh, LLM*; Elspeth Guild; Nicholas P. Lemos, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G25</td>
<td>Legal Tools to Advocate for Forensic Standards in Missing Persons’ Cases</td>
<td>Maria Nectaria Antoniou, LLM, MSt*; Vaughn Rossouw, LLM, LLB*; Stephen A. Fonseca, BTech; Pierre Guyomarc’h, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G26</td>
<td>Guidelines for the Judicial Assessment of Expert Evidence in the Mexican Legal System</td>
<td>Zoraida García-Castillo, PhD*; Fernanda Lopez-Escobedo, PhD; Anahy Rodriguez-González, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G27</td>
<td>Exploring the Contours of Bridging the Gap Between Forensic Science and Law in India</td>
<td>Pancham Preet Kaur, LLM*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>G28</td>
<td>Challenging Scientists: A Three-Tier System for Educating Lawyers in Forensic Techniques</td>
<td>Dinkar Vr, LLM, PhD*</td>
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### Understanding Our Limits: Study Design, Black Boxes, and the Trouble With Inconclusives

**Moderator:** Thomas Busey

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<tr>
<td>8:00 AM – 8:30 AM</td>
<td>G29</td>
<td>An FBI Laboratory Decision Analysis “Black Box” Studies in Pattern Evidence Examinations</td>
<td>Gene Peters*</td>
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<tr>
<td>8:30 AM – 9:00 AM</td>
<td>G30</td>
<td>Error Rate Studies: The Good, the So-So, and the Unacceptable</td>
<td>Kori Khan, MD*; Alicia Laura Carriquiry, PhD</td>
</tr>
<tr>
<td>9:00 AM – 9:30 AM</td>
<td>G31</td>
<td>Inconclusive Decisions and Error Rates in Forensic Science</td>
<td>Henry J. Swofford, MSFS, PhD*; Steven Lund, PhD; Harirahan Iyer, PhD; John M. Butler, PhD; Johannes Soons, PhD; Robert M. Thompson, MFS, BS; Vincent Desiderio, Jr., MSFS; John Paul Jones, BS, MBA; Robert Ramotowski, MS</td>
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<tr>
<td>9:30 AM – 10:15 AM</td>
<td>G32</td>
<td>A New Black Box Study—Part I: The Accuracy of Latent Print Examiners: What More Do We Know in a Decade?</td>
<td>R. Austin Hicklin, PhD*; Nicole M. Richetelli, PhD*; AshLee Taylor, MS*; JoAnn Buscaglia, PhD*</td>
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10:15 AM – 10:45 AM  
**G33**  
**A New Black Box Study—Part II: Bullets (NIST/Noblis)**  
*R. Austin Hicklin, PhD*; *Nicole M. Richetelli, PhD*; *Melissa Taylor, MS*;  
*Robert Thompson, MS*

10:45 AM – 11:00 AM  
**BREAK**

**The Role of Medical Professionals and Digital Multimedia Evidence in Ensuring Justice**

Moderator: Nicolas Hughes, JD, MS  
Co-Moderator: Leigh Tomlin, JD

11:00 AM – 11:30 AM  
**G34**  
**In a Manner of Speaking: A Medical and Legal Perspective on the Problem of Manner of Death Testimony in Criminal Trials and What We (All) Should Be Doing About It**  
*Allison Lewis, JD, BA*; *Andrew Baker, MD*  

11:30 AM – 12:00 PM  
**G35**  
**Misleading Sexual Assault Nurse Examiner (SANE) Testimony in Child Sexual Abuse Cases**  
*Nancy R. Downing, JD*  

12:00 PM – 12:30 PM  
**G36**  
**Modeling Influences on the Understanding of Digital and Multimedia Evidence (DME) by Attorneys and Digital Forensic Examiners (DFE) Within the United States Criminal Justice System**  
*Joseph Levi White, PhD*

12:30 PM – 1:45 PM  
**BREAK**

**History and Current State of DNA Mixture Interpretation (for Lawyers)**

Moderator: Dawn Boswell, JD  
Co-Moderator: Jarrah Kennedy, MSFS

1:45 PM – 2:15 PM  
**G37**  
**DNA Mixture Interpretation: A History of Field and NIST Foundation Study Findings**  
*John M. Butler, PhD*  

2:15 PM – 3:15 PM  
**G38**  
**DNAmix 2021: Inter-Laboratory Variation in the Interpretation of DNA Mixtures**  
*R. Austin Hicklin, MA, BA*; *Jonathan Davoren, MSc*; *Nicole M. Richetelli, PhD*;  
*Robert Bever, PhD*

3:15 AM – 3:30 PM  
**BREAK**

**Human Factors in Forensic DNA Interpretation: Strategies for Effective Implementation**

Moderator: Dawn Boswell, JD  
Co-Moderator: Jarrah Kennedy, MSFS

3:30 PM – 4:00 PM  
**G39**  
**An Overview of the NIST/NJ Expert Working Group on Human Factors in Forensic DNA Interpretation Report**  
*Melissa Taylor*; *Nikola Osborne, PhD*  

4:00 PM – 4:45 PM  
**G40**  
**Improving Forensic DNA Interpretation Protocols and Reports Through the Implementation of Human Factors Recommendations**  
*Britton Morin, MSFS*; *Nikola Osborne, PhD*
Thursday

Poster Session

11:30 AM – 1:00 PM  H1  A Pilot Study on Postmortem Determination of Drug Abuse on Dental Tissues
Ilenia Bianchi, DMD*; Marta Cippitelli, PhD; Erika Buratti, PhD; Gianmario Mietti, PhD;
Alice Cerioni, PhD; Roberto Scendoni, PhD; Rino Froldi, MSc; Vilma Pinchi, PhD;
Mariano Cingolani, MD, MSc

11:30 AM – 1:00 PM  H2  An Overview and Evaluation of Forensic Dentistry Cases With Trauma Damage and
Bone Fractures
Huseyin Afsin; Gulnaz T. Javan, PhD*

11:30 AM – 1:00 PM  H3  Justice for the Vanished but Not Missing
Elizabeth Ruth Smith, DDS*

11:30 AM – 1:00 PM  H4  A Picture Reveals the Truth!
Megha Shah, DDS*

11:30 AM – 1:00 PM  H5  Postmortem Histological Changes of Dental Pulp for Postmortem Interval Estimation:
A Pilot Study
Ilenia Bianchi, DMD*; Ana Margarida Rodrigues, MSc; Diana Augusto, MSc; João Aquino, PhD;
Isabel Fonseca, MD, PhD; Vilma Pinchi, PhD; Cristiana Palmela Pereira, MSc; PhD

11:30 AM – 1:00 PM  H6  The Forensic Anthropological Significance of Dental Calculus Deposits as Proxy for
Identity of the Host and the Oral Microbiota: A Systematic Review
Jagmahender Singh Sehrawat, PhD*; Niraj Rai, PhD

11:30 AM – 1:00 PM  H7  The Use of the Disaster Victim Identification (DVI) Method for a Mass Casualty Bus
Crash in Manitoba, Canada
Noriko B. Boorberg, DMD, MEd*; Trenna Reeve, DMD; Carla Penner, DDS

11:30 AM – 1:00 PM  H8  Color Change in Deciduous and Permanent Enamel and Dentin Due to Burning
Michal Peer, MSc*; Rachel Sarig, DMD, PhD

11:30 AM – 1:00 PM  H9  Evaluating the Relationship Between Various Oral Pathological Conditions and the
Persistence of Lip Prints
Jagmeet Kaur, BSc, MSc*; Mukesh Kumar K. Thakar, PhD

To ID or Not to ID ... Is This a Question?

Moderator: Ray Miller, DDS

8:30 AM – 8:45 AM  H10  The $\delta^{18}O$ Values as Chemical Signatures of Geo-Locality of Ajnala Skeletal Remains:
A Forensic Odontological Study
Jagmahender Singh Sehrawat, PhD*; Niraj Rai, PhD

8:45 AM – 9:15 AM  H11  Investigating the Influence of Sex and Ethnicity on Human Identification Using Palatal Scans
Botond Simon, DMD*; Aida Roudgari; Akos Mikolicz; Arvin Irani Shahbazi; Janos Vag

*Presenting Author
## ODONTOLOGY

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<tr>
<td>9:15 AM – 9:30 AM</td>
<td>H12</td>
<td>A Colorimetric Study of Burnt Teeth as a Diagnostic Tool to Aid in Forensic Dental Identification</td>
<td>Emilio Nuzzolese, DDS, PhD*; Matteo Aliberti, DDS; Lucia Tattoli, MD, PhD; Giancarlo Di Vella, MD, PhD</td>
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<tr>
<td>9:30 AM – 9:45 AM</td>
<td>H13</td>
<td>A Multinational Classification of Dental Resin Composites for Forensic Purposes</td>
<td>Emilio Nuzzolese, DDS, PhD*; Davide Bosio, MD; Mariagrazia Putzu, MD; Giancarlo Di Vella, MD, PhD</td>
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<tr>
<td>9:45 AM – 10:00 AM</td>
<td>H14</td>
<td>A Radiographic Field Guide to Modern Dental Restorative Materials</td>
<td>Elif D. Aksoylu, DMD, MPH*</td>
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<tr>
<td>10:00 AM – 10:15 AM</td>
<td>H15</td>
<td>Artificial Intelligence-Driven Dental Comparison for Human Identification in Mass Disasters</td>
<td>Guillermo Ramírez*; Antonio David Villegas, MSc, BS; Tzipi Kahana; Óscar Cordón; Oscar Ibáñez Panizo, PhD</td>
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<tr>
<td>10:15 AM – 10:30 AM</td>
<td>H16</td>
<td>Prehistoric Therapeutic Dentistry in the Mid-Atlantic United States: The Use of Multi-Modal Imaging on Ancient Dental Specimens</td>
<td>John B. Nase, DDS*; Dana Kollmann, PhD*</td>
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<td>10:30 AM – 10:45 AM</td>
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### Identification Plus

**Moderator:** Sarah Friend, DDS

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<tr>
<td>10:45 AM – 11:00 AM</td>
<td>H17</td>
<td>Dental Identification After an Arson Attack</td>
<td>Camilla George, MSc, LLM*</td>
</tr>
<tr>
<td>11:00 AM – 11:15 AM</td>
<td>H18</td>
<td>Developing an Animal Model for Investigating Tissue Deterioration of the Palate by Intraoral Scanner</td>
<td>Janos Vag*; Sandor Mikó; Arvin Irani Shahbazi</td>
</tr>
<tr>
<td>11:15 AM – 11:30 AM</td>
<td>H19</td>
<td>The Establishment of a Provincial Identification Unit and Its Promising Results</td>
<td>Corinne DAnjou, DMD*</td>
</tr>
<tr>
<td>11:30 AM – 11:45 AM</td>
<td>H20</td>
<td>The Potential of Smile Photographs and a PM Intraoral Scanner for Dental Identification</td>
<td>Rosario Guerra Marti*; Emilio Nuzzolese, DDS, PhD*; Andrea Valsecchi, PhD; Oscar Ibáñez Panizo, PhD; Inmaculada Alemán, PhD; Sven Benthaus; Domenico Dellaia, MD</td>
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<td>11:45 AM – 12:00 PM</td>
<td>H21</td>
<td>The Production of Dental Remains Replicas With 3D Modeling</td>
<td>Robin A. Ainsworth, DDS, MS*; Daniel Sierra; James Pizzini, BS; Charles DeFreest, DDS; Mario Ruybal</td>
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<td>12:00 PM – 1:15 PM</td>
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<td>Break</td>
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ODONTOLOGY

Still Biting After All These Years ...

Moderator: Cristiana Palmela Pereira, PhD

1:15 PM – 1:30 PM  H22  Odontometrics and Artificial Intelligence: A Comparative Study for Best Prediction of Facial Geometry in Medicolegal Cases  
Nandini Chitara, MSc*; Rakesh Meena, MSc; Ankita Guleria, MSc; Kewal Krishan, PhD

1:30 PM – 1:45 PM  H26  Insights From Wrongful Convictions Related to Bitemark Analysis  
John Morgan*

1:45 PM – 2:00 PM  H24  The Evolution of the American Board of Forensic Odontology Standards and Guidelines for Evaluating Bitemarks  
Richard H. Fixott, DDS*

2:00 PM – 2:15 PM  H25  Bitemarks: Can We Agree?  
James F. Goodrich, BDS*; Mark Eilers, DMD

2:15 PM – 2:30 PM  H23  Advancing Forensic Odontology Standards: Insights and Updates  
Kenneth W. Aschheim, DDS*

2:30 PM – 2:45 PM  H27  Expert Witness Testimony and the Standard of Care Involving Swallowed Dental Objects  
Raymond G. Miller, BA, DDS*

2:45 PM – 3:00 PM  H28  Justice for Mariyah: Bitemark Analysis and the Power of Exclusion  
Grace Chung, DDS*

3:00 PM – 3:45 PM  BREAK

How Old Are You Now?

Moderator: Lindsay Spears, DDS

3:45 PM – 4:00 PM  H29  The Good, Bad, and Ugly of Bitemarks  
Christy Chang*; Shirley Lewis, BDS, MSD

4:00 PM – 4:15 PM  H30  Dental Age Assessment Through a Learning Machine Approach  
Valon Nushi, DDS*; Ana M. Rodrigues, DMD; Diana Augusto, MSc; Rui Santos; Arlindo Oliveira, PhD; Alexandre Francisco, PhD; Francisco Salvado, PhD; Hrvoje Brkić, PhD; Cristiana Palmela Pereira, MSc; PhD

4:15 PM – 4:30 PM  H31  The Age Assessment Procedure and Results of the Age Assessment: Where Is the Dental Age Assessment?  
Cristiana Palmela Pereira, MSc; PhD*

4:30 PM – 4:45 PM  H32  The Performance of Different Dental Age Estimation Methods on Saudi Children  
Sakher AlQahtani, PhD*

4:45 PM – 5:00 PM  H33  A Comparison of Third Molar Development Between Hispanic Populations in Two Different Geographical Locations in the United States  
Jayakumar Jayaraman, BDS, MDS, MS, PhD*

5:00 PM – 5:15 PM  H34  WITHDRAWN

*Presenting Author
Friday

Last and Never Least...

Moderator: Mary Speicher, DMD

8:45 AM – 9:00 AM  H35  A 3D CBCT Method for Adult Age Estimation Based on Pulp Chamber Narrowing of Central Incisors
   Ilenia Bianchi, DMD*; Giulia Vitale, MD, DDS; Ugo Santosuosso, MSc; Lorella Bonaccorsi, PhD; Francesco Pradella, MD, DDS; Martina Focardi, MD; Vilma Pinchi, PhD

9:00 AM – 9:15 AM  H36  A Dental Age Comparison of North Indian Children and Adolescents
   Deeksha Sankhyan*

9:15 AM – 9:30 AM  H37  Dental Assessment of Unaccompanied Refugees: A Mediterranean Perspective
   Mariagrazia Marisei, MD*; Pierpaolo Di Lorenzo, MD; Anita Sammarco, MD; Gaetano Di Donna, MD; Claudia Casella, JD; Fabio Policino; Emanuele Capasso, MD; Massimo Niola, PhD

9:30 AM – 10:00 AM  H38  The Application of ABFO Standards and Guidelines in Diagnosing Human Bite Injuries
   Richard H. Fixott, DDS*

10:00 AM – 10:15 AM  H39  When the Biter Leaves a Tooth Behind
   Daniel T. Hines*; Howard Harcke, MD

*Presenting Author
# PATHOLOGY/BIOLOGY

## Wednesday

### Poster Session

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<th>Time</th>
<th>Presentation</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td><strong>I1</strong> Fatal Pesticide Ingestion Involving Boric Acid: A Case Report and Review of the Literature</td>
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<tr>
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<td>Ashley Lukefahr, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I2</strong> WITHDRAWN</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td><strong>I3</strong> A Sudden Unexpected Death From a Rupture of the Pulmonary Artery in Patients With Systemic Autoimmune Diseases</td>
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<td>Sharon Duzioni, MD*; Donna Gherardi, MD; Paolo Nozza, MD; Francesco Ventura, MD, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I4</strong> An 11-Year Review of Fall Deaths Due to Head Trauma Reported in Shelby County, TN</td>
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<td>Madison Benton, BS*; Erica Curry, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I5</strong> Cause and Manner of Death in New Mexico’s Unhoused Population, 2014–2018</td>
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<td>Elyssa Glassheim, MD*; Lauren Dvorscak, MD; Sarah Lathrop, DVM, PhD; Garon Bodor, MS; Neil Greene, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I6</strong> Under Pandemic Pressure: A Four-Year Review of Suicidal Deaths in Shelby County, Tennessee, With Emphasis on the Effect of COVID-19</td>
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<td>Jacob Williams*; Scott Collier, DM; Danielle Harrell, DO</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I7</strong> A Case of Death Resulting From an Unrecognized Wilms Tumor in a 4-Year-Old Child</td>
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<td>Isabella Caristo, MD*; Rosario Barranco, MD, PhD; Paolo Nozza, MD; Francesco Ventura, MD, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I8</strong> Considerations of Decedent General Health Parameters During Determination of Cause of Death in Persons Abusing Substances</td>
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<td>Clare Hartman*; Chandler M. Grant, MS; Michael W. Johnson, MD, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I9</strong> Fat Embolism Syndrome in a Patient With Osteogenesis Imperfecta: A Textbook Case</td>
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<td>Francesco Carravetta, DM*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Antonio Straface, MD; Laura Ambrosi; Biagio Solarino</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I10</strong> Ligature Strangulation Utilizing Cable Ties: An Unusual Means of Suicide in Italy</td>
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<td>Roberta Mercuri, MD*; Valentina Calamano, MD; Federica Gamba, MD; Francesco Ventura, MD, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I11</strong> Chasing Euphoria: When Butane Inhalation Leads to Death</td>
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<td>Naomi Iacoponi, MD*; Julia Lazzari, MD; Carla Occhipinti, MD; Ilaria Marcacci, MD; Aniello Maiese, PhD; Fabio Stefanelli, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I12</strong> Acute or Chronic Myocarditis? Or Is It Budd-Chiari Syndrome? A Peculiar Case of Multi-Organ Failure in a Subject With SARS-CoV2 Infection</td>
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<td>Eleonora Mezzetti, MD*; Matteo Leoni, MD; Giulia Berneschi, MD; Arianna Baronti, MD; Naomi Iacoponi, MD*; Marco Di Paolo, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I13</strong> Anosmia and COVID-19: The Search for the Virus in the Brain Through Immunohistochemical Investigations With the Anti-SARS-CoV-2 Antibody</td>
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<td>De Simone Stefania, MD*; Maria Antonella Bosco, MD; Giacani Elena, MD; Gurgoglione Giovanni, MD; Isabella Di Marzo, MD; Raffaele La Russa, MD, PhD*; Luigi Cipolloni, MD*</td>
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11:30 AM – 1:00 PM  I14  Oxidative Stress Markers in the Human Brain and Placenta May Reveal the Timing of Hypoxic-Ischemic Injury: Evidence From an Immunohistochemical Study
Benedetta Baldari, MD*; Margherita Neri, MD PhD*; Giacani Elena, MD; De Simone Stefania, MD*; Rinaldi Giuseppe, MD; Vittorio Simona, MS*; Luigi Cipolloni, MD*

11:30 AM – 1:00 PM  I15  Starvation-induced Hepatocyte Changes: Light and Electron Microscopy Findings in Two Pediatric Homicide Cases
Maria Elisa Smith, MD*; Zabiullah Ali, MD

11:30 AM – 1:00 PM  I16  Macrophage Activation Syndrome Following Administration of the ChAdOx1 nCoV-19 Vaccine: A Case Study
Corinne La Spina*; Giuseppe Davide Albano; Giuliana Malandrino, MD; Giovanni Cannella; Dario Scaglione, MD; Emiliano Maresi; Stefania Zerbo

11:30 AM – 1:00 PM  I17  A Delayed Traumatic Intracranial Hemorrhage With Antithrombotic Medication: A Report of an Autopsy Case and Verification in an Animal Model
Kazuhiko Kibayashi, MD*

11:30 AM – 1:00 PM  I18  Delayed Traumatic Rupture of the Spleen in a Patient with Mantle Cell Non-Hodgkin Lymphoma: Histopathological and Immunohistochemistry Aspects
Giuseppe Davide Albano; Vanessa Milazzo, MD; Mario Spano, MD*; Maria Puntarello; Emiliano Maresi; Stefania Zerbo; Antonina Argo

11:30 AM – 1:00 PM  I19  Combined Mechanical Asphyxia by Strangulation and Immobilization of the Chest in a Case of Matricide
Francesca Consalgo, MD*; Matteo De Simone*; Martina Padovano, MD; Matteo Scopetti, MD; Pasquale Ardovino, MD; Alessandro Santurro, MD, PhD*

11:30 AM – 1:00 PM  I20  Unknown Heart Disease and Sudden Cardiac Death: The Role of Postmortem Investigations
Matteo Antonio A. Sacco, MD*; Margherita Sgroi, MD; Luca Calanna, MD; Maria Cristina Verrina, MD; Giulio Pulporto, MD*; Alessandro Pasquale Tarallo, MD*; Wandamaria Mazzuca; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*

11:30 AM – 1:00 PM  I21  Sudden Cardiac Death in a Man With a Functioning Implantable Cardioverter-Defibrillator
Federica Ministeri, MD*; Federico Privitera, MD; Grazia Giulia Pantè; Cristoforo Pomara, MD

11:30 AM – 1:00 PM  I22  Unraveling Unusual Mediastinal Anatomy Alterations Through Postmortem CT and Multiparametric 3-D Reconstructions: A Case Series of Major Trauma
Mauro Midiri*; Giuseppe Davide Albano; Corinne La Spina; Maria Puntarello; Valeria Giglio, MD; Erika Serena Sorrentino; Giuseppe Io Re; Antonina Argo

11:30 AM – 1:00 PM  I23  The Role of Optical Coherence Tomography in Sudden Cardiac Death: Insights and Future Perspectives in Forensic Sciences Through a Case Series of Spontaneous Coronary Artery Dissection
Giovanni Gurgoglione, MD*; Maria Antonella Bosco, MD*; Giuseppe Rinaldi, MD*; Stefania De Simone, MD; Elena Giaconi, MD; Luigi Cipolloni, MD*; Francesco Prari, MD, PhD*

11:30 AM – 1:00 PM  I24  The Role of Radiological Investigations and the Postmortem Laboratory in an Enigmatic Suicide Case: Between Doubts and Certainties
Isabella Aquila, PhD, MD*; Matteo Antonio A. Sacco, MD*; Alessandro Schettini; Valerio Riccardo Aquila; Maria Cristina Verrina, MD; Luca Calanna, MD*; Felice Francesco Carabellese, MD

*Presenting Author
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| 11:30 AM – 1:00 PM | I25     | **A Case of Dismemberment in Italy: A Multidisciplinary Approach to Put the Pieces Together**  
Luca Diani, MD*; Michele Carpinteri, MD; Laura Camilla Gasparini, MD; Giada Rovito, MD;  
Irene Pradelle, MD; Enrica Callegari, LM; Rosa M. Gaudio, MD, PhD;  
Giovanni Cecchetto, MD, PhD; Margherita Neri, MD PhD; Omar Bonato, MD |                                                                                   |
| 11:30 AM – 1:00 PM | I26     | **A Rare Case of Homicide by Air Rifle**  
Joshua Smith, PhD*; Tiffany Hollenbeck, DO |                                                                                   |
| 11:30 AM – 1:00 PM | I27     | **The Cerulean Man: A Case of Argyria**  
Alfonzo Halfin*; Todd M. Luckasevic, DO; Karl E. Williams, MD, NPH |                                                                                   |
| 11:30 AM – 1:00 PM | I28     | **Analysis of a Case of Neonatal Precipitation: Feticide or Infanticide?**  
Francesca Consalvo, MD*; Matteo De Simone*; Pasquale Ardovino, MD;  
Martina Padovano, MD; Matteo Scopetti, MD; Alessandro Santurro, MD, PhD* |                                                                                   |
| 11:30 AM – 1:00 PM | I29     | **Death Due to Aggression by Maremman Dogs: The Role of Forensic Sciences in the Reconstruction of the Case**  
Matteo Antonio A. Sacco, MD*; Francesca Maria Galassi; Elena Varotto, PhD;  
Laura Landini, MA; Maria Cristina Verrina, MD*; Luca Calanna, MD; Wandamaria Mazzuca*;  
Roberto Raffaele*, Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD* |                                                                                   |
| 11:30 AM – 1:00 PM | I30     | **A Case of Fatal Hemorrhage: Natural or Violent Death? A Deceptive Crime Scene**  
Gennaro Baldino, MD*; Cristina Mondello, MD; Giorgia Burrascano, MD*;  
Domenicantonio Iannello, MD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD* |                                                                                   |
| 11:30 AM – 1:00 PM | I31     | **Transorbital Orbitocranial Penetrating Injuries (TOPI): A Report of Two Cases**  
Tancredì Dino Mario, MD; Bibbò Roberta, MD*; Benedetta Baldari, MD;  
Maria Antonella Bosco, MD*; Carpano Francesco, MD; Moro Diego, MD; Luigi Cipolloni, MD* |                                                                                   |
| 11:30 AM – 1:00 PM | I32     | **Complex Suicide by Gunshot and Hanging**  
Eugenio Jacopo Piero Gallotti, MD*; Dario Galatone; Chiara Franzetti, MD; Mattia Arturi, MS;  
Luca Tajana, MD; Matteo Moretti, MD; Gulnaz T. Javan, PhD; Silvia D. Visonà, MD, PhD;  
Luca Morini, PhD |                                                                                   |
| 11:30 AM – 1:00 PM | I33     | **Black Esophagus and Diabetic Ketoacidosis: A Report of an Autopsy Case**  
Nicolò’ Vernazza, MD*; Cristiano Micera, MD; Francesca Buffelli, MD;  
Francesco Ventura, MD, PhD; Camilla Tettamanti, MD, PhD |                                                                                   |
| 11:30 AM – 1:00 PM | I34     | **A Blunt Force Injury to the Chest Caused by Firework Misuse: A Case Report**  
Roa Alqabbani*; Melissa A. Brassell, MD |                                                                                   |
| 11:30 AM – 1:00 PM | I35     | **Frail Elder Abuse in Long-Term Care Facilities: A Suspected Case of Atypical Asphyxia**  
Roberta Mercuri, MD*; Filippo Spigno, MD; Sara Lo Pinto, MD; Francesco Ventura, MD, PhD |                                                                                   |
| 11:30 AM – 1:00 PM | I36     | **Sudden Death Secondary to Colloid Cyst of the Third Ventricle: A Case Review**  
Erin Flaherty*; Christine James, DO; Amanda O. Fisher-Hubbard, MD; Allison L. Deemter, MA |                                                                                   |
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| 11:30 AM – 1:00 PM    | **I37** Marjolin's Ulcers in the Forensic Setting: When Cancer Becomes a Homicide  
|                       | *Kamilah Fernandez, MD*; *Stephanie A. Dean, MD*                              |
| 11:30 AM – 1:00 PM    | **I38** Oxidative Stress in Sepsis: A Focus on Cardiac Pathology            
|                       | *Giuseppe Bertozzi, MD*; *Raffaele La Russa, MD, PhD*; *Domenico Martinelli, MD, PhD*;  
|                       | *Santina Cantatore, MLT*; *Luigi Cipolloni, MD*                               |
| 11:30 AM – 1:00 PM    | **I39** Blunt Force Trauma and Aspiration of Gastric Contents: What Is the Cause of Death?  
|                       | *An Unusual Case*                                                            
|                       | *Luca Tomassini*, *Manta Anna Maria, MD*; *Piergiorgio Fedeli*; *Cristiana Gambelunghe, PhD*;  
|                       | *Massimo Lancia, MD*                                                        |
| 11:30 AM – 1:00 PM    | **I40** Dealing With a Massive Number of Victims Due to an Accidental Fire  
|                       | *Amir Hamuod*                                                                |
| 11:30 AM – 1:00 PM    | **I41** Bee-Ware of MDPHP: A Case of Intoxication by Synthetic Cathinones Resulting in Hundreds of Bee Stings  
|                       | *Jacopo Chirillo, DM*; *Pietro Clemente C. Salmoirago, MD*; *Claudia Carelli*;  
|                       | *Mirella Sabatino, MD*; *Valeria Prandini, MD*; *Greta Seveso, DM*; *Simone Turpini, MD*;  
|                       | *Carlo Previderè*; *Luca Tajana, MD*; *Luca Morini, PhD*                    |
| 11:30 AM – 1:00 PM    | **I42** When a Nursing Home Turns Into a Killing Home—Forensic Aspects of Serial Murder in Health Care: A Case of a Serial Killer Nurse  
|                       | *Federica Spina, MD*; *Giacomo Visi, MD*; *Eleonora Mezzetti, MD*; *Andrea Costantino, MD*;  
|                       | *Antonello Di Paolo, MD*; *Silvio Chericoni, PhD*; *Fabio Stefanelli, PhD*    |
| 11:30 AM – 1:00 PM    | **I43** Respiratory Illness Surveillance in Suspected Drug-Related Deaths    
|                       | *Abigail J. Grande, BS, MPH*; *Asmaa Obead, MBChB, MPH*; *Gemma Harkin, BS, MPH*;  
|                       | *Joyce L. deJong, DO*; *Amanda O. Fisher-Hubbard, MD*; *Christine M. Pink, PhD* |
| 11:30 AM – 1:00 PM    | **I44** Comparing Manner of Death in Georgia Prison and Jail Populations     
|                       | *Alexander Yue, BS, BA*; *Rachel Geller, MD*; *Sandra P. Reynolds, MD*; *Ashley Garrish* |
| 11:30 AM – 1:00 PM    | **I45** The Effect of Preservation, Time, and Temperature on DNA Recovery of Blow Fly Specimens (Diptera: Calliphoridae)  
|                       | *Kathryn Melancon*; *Synee N. Wedel, BSc*; *Jonathan J. Parrott, PhD*       |
| 11:30 AM – 1:00 PM    | **I46** The Succession of Invertebrate Communities Involved in Swine Decomposition in Freshwater Environments in Italy  
|                       | *Andrea Benassi, PhD, MS*; *Gloria Raise*; *Nicholas Lorusso*; *Denise Gemmellaro, PhD* |
| 11:30 AM – 1:00 PM    | **I47** The Persistence of DNA in Water From an Actively Decomposing Cadaver for Human Identification  
|                       | *Anna Mae Adkins, BS*; *Rachel Houston, PhD*; *Sheree R. Hughes, BSc, PhD*;  
|                       | *Haeli Kennedy, BS*; *Hannah K. Cervenka, BS*                               |

*Presenting Author*
PATHOLOGY/BIOLOGY

Thursday—Session I

2024 Jay Dix Lecture Series

Moderator: Michael Graham, MD

9:00 AM – 9:10 AM  I107  2024 Jay Dix Day Memorial Lecture Series
Michael A. Graham, MD*; Joseph A. Prahlow, MD*; Andrew Baker, MD*; James L. Caruso, MD*; Susan F. Ely, MD*; Katherine Maloney, MD*; James R. Gill, MD*

9:10 AM – 9:50 AM  I107  Postmortem Changes
Joseph A. Prahlow, MD*

9:50 AM – 10:15 AM  BREAK

10:15 AM – 11:05 AM  I107  Firearm Injuries
Andrew Baker, MD*

11:05 AM – 12:00 PM  I107  Deaths Involving Watery Environments
James L. Caruso, MD*

12:00 PM – 2:00 PM  BREAK

2:00 PM – 2:50 PM  I107  Asphyxia
Susan F. Ely, MD*

2:50 PM – 3:05 PM  BREAK

3:05 PM – 3:55 PM  I107  Not Just Small Adults: Essentials of Pediatric Pathology
Katherine Maloney, MD*

3:55 PM – 5:00 PM  I107  Sharp Force Injuries
James R. Gill, MD*

Thursday—Session II

COVID-19 and Other Causes of Death

Moderator: Gregory Schmunk, MD  Co-Moderator: Amir Hamoud, MD

8:30 AM – 8:45 AM  I48  Death From Angioedema With Anaphylaxis and COVID-19
Lakshmanan Sathyavagiswaran, MD*; Richard Ou, MD; J Daniel Augustine, MD

8:45 AM – 9:00 AM  I49  Deaths Due to COVID-19 Infection in Children and Young People Aged 0–19 at the Harris County Institute of Forensic Sciences in Houston, Texas
Jennifer L. Ross, MD*

9:00 AM – 9:15 AM  I50  Drowning Associated With Carbon Monoxide Toxicity in the Setting of Recreational Boating
Reba Sue Cherian, DO*; Leticia Schuman, MD; Brad Hall, PhD; J. Keith Pinckard, MD, PhD

9:15 AM – 9:30 AM  I51  A Cornucopia of Death by Gas: Fatalities Involving Organic and Inorganic Gases
Hannah C. Jarvis, MBBS, MRCS*; Gregory Dickinson, MD, MS

*Presenting Author
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9:30 AM – 9:45 AM  I52  The Postmortem Utility of Neuron-Specific Enolase and S100B for Differentiating Traumatic Brain Injury From Other Causes of Death
Siddhartha Das, MBBS, MD*; Ramaswamy N, MBBS, MD; Vinod Chaudhari, MBBS, MD; Prashant Adole, BVVS, MD; Sreerekha J, MBBS, MD; Harichandrakumar, KT, PhD

9:45 AM – 10:00 AM  I53  The Clarksburg Insulin Murders
Paul S. Uribe, MD*; Katherine A. Grosso, MA, BS*; Colin F. Davis*; Keith G. Vereb*; Jarod Douglas*

10:00 AM – 10:15 AM  I54  A Complex Suicide With Over 250 Sharp Force Injuries and Falling From Height
Maya Neumann*; Wolfgang Grellner, MD

10:15 AM – 10:30 AM  BREAK

Pediatric Deaths

Moderator: Jolee Suddock, DO  Co-Moderator: Michael Harrell, MD

10:30 AM – 10:45 AM  I55  Medicolegal Pediatric Natural Deaths: Causes of Death and Demographics
John W. Powell, MD*; Hannah C. Jarvis, MBBS, MRCS; Melissa M. Blessing, DO

10:45 AM – 11:00 AM  I56  An Unusual Form of Sudden Infant Death in the Arctic
Cristin Marie Rolf, MD*

11:00 AM – 11:15 AM  I57  Child Abuse Diagnostic Work-Up: Let’s Put on Our Thinking Caps
Anita Sammarco, MD*; Pierpaolo Di Lorenzo, MD; Maria Pieri; Mariagrazia Marisei, MD; Gaetano Di Donna, MD; Fabio Policino; Emanuele Capasso, MD; Massimo Niola, PhD

11:15 AM – 11:30 AM  I58  Suicides in Childhood and Adolescence: A Ten-Year Study From Jefferson County, Alabama
Nicola Pigaiani, MD*; Daniel W. Dye, MD; Daniel S. Atherton, MD; Francesco Ausania, MD, PhD; Federica Bortolotti, MD, PhD; Gregory G. Davis, MD, MSPH; Brandi C. McCleskey, MD

11:30 AM – 11:45 AM  I59  Changes to the Certification of Sudden Unexplained Deaths in Infants From 2012 to 2023
Amanda Lynne Marinello, BS*; Brandi C. McCleskey, MD

11:45 AM – 12:00 PM  I60  A Histological Examination of the Uterus to Confirm Early Pregnancy in Female Homicide Victims
Marianne Hamel, MD, PhD*; Andrew F. Falzon, MD, MCS

12:00 PM – 1:00 PM  BREAK

Case Reports

Moderator: Owen Middleton, MD  Co-Moderator: Quinn Demik, MD

1:00 PM – 1:15 PM  I61  Multiple Shots of Different Firearms in a Charred Corpse: A Case Report
Matta Arturi, MS*; Martina Demasi, MD; Nicolas Martinelli; Pierangela Grignani; Francesca Freni, MS; Yao Chen, MD

1:15 PM – 1:30 PM  I62  A Macro and Micro Time-Dependent Washer Woman Wrinkling and Reversibility Trivialized in a Bathtub Drowning: A Case Presentation
Pete Speth, MD*
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<tr>
<td>1:30 PM</td>
<td>I63</td>
<td>Complete Laryngotracheal Separation Without Decapitation in a Case of Hanging: An Uncommon Phenomenon</td>
<td>Nilesh Keshav Tumram, MBBS, MD*</td>
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<td>1:45 PM</td>
<td>I64</td>
<td>One House, Two Bodies: A Case Series and Considerations for Investigating Companion “Double Deaths,” Including Challenges in the “Philemon and Baucis” Syndrome</td>
<td>Deland Weyrauch, MD*; Christopher Borck, MD</td>
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<td>2:00 PM</td>
<td>I65</td>
<td>A Diamond in the Rough—Myocardial Infarction as a Complication of “Near Hanging” in an Adolescent: An Exceptionally Rare-Find Case Report</td>
<td>Barbara Iga Smyk, DM*; José Jerónimo Fonte-Santa da Silva</td>
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<tr>
<td>2:15 PM</td>
<td>I66</td>
<td>A Macro and Micro Time-Dependent Washer Woman Wrinkling and Reversibility in a Bathtub Drowning Case: 20th-Century German Research Proves Innocence</td>
<td>Pete Speth, MD*</td>
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<td>2:30 PM</td>
<td>I67</td>
<td>Deaths Involving Forklifts in Cook County, Illinois: A Retrospective Review</td>
<td>Megan Kinn, DO, MS*; Lorenzo Gitto, MD; David M. Waters, MD</td>
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<tr>
<td>2:45 PM</td>
<td>I68</td>
<td>Myocardial Scarring and Interstitial Fibrosis: An Unknowable, Unpredictable, and Unavoidable Tragedy</td>
<td>Gerald Feigin, MD*; Priya Banerjee, MD; Gil Sapir, JD, MSc</td>
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<td>3:00 PM</td>
<td>I69</td>
<td>Death by Lung Hypoplasia as a Result of a Bilateral Congenital Diaphragmatic Hernia</td>
<td>Maya Neumann*; Wolfgang Grellner, MD</td>
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**Interdisciplinary Approach**

Moderator: Gregory Schmunk, MD  
Co-Moderator: Lorenzo Gitto, MD

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<th>Time</th>
<th>Session</th>
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<tr>
<td>3:30 PM</td>
<td>I70</td>
<td>Utilizing an In-House Forensic Epidemiologist in the Denver Office of the Medical Examiner</td>
<td>Ami L. Jackson, DO*; Meredith A. Frank, MD; Ethan Jamison, MPH; James L. Caruso, MD; Ian J. Puffenberger, MD; Sterling J. McLaren, MD</td>
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<tr>
<td>3:45 PM</td>
<td>I71</td>
<td>A Multidisciplinary Approach to the Canonical Recognition Activities Conducted on the Bone Remains Attributed to St. Hippolitus and the Martyrs Crescentius and Irenaeus (4th Century AD)</td>
<td>Francesca Consalvo, MD*; Alessandro Santurro, MD, PhD*; Carmen Sementa, MD; Chantal Milani, DMD, PhD; Francesca Motta; Francesco La Sala, MD; Sergio Brogna, MD</td>
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<tr>
<td>4:00 PM</td>
<td>I72</td>
<td>A Death in the Setting of Diabetic Ketoacidosis and Concurrent SGLT2 Inhibitor Use</td>
<td>Christopher Sullivan*; Angelina Phillips, MD</td>
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<td>4:15 PM</td>
<td>I73</td>
<td><strong>WITHDRAWN</strong></td>
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<td>4:30 PM</td>
<td>I74</td>
<td>Investigating Equine-Related and Bovine-Related Human Fatalities in Oklahoma</td>
<td>Kaylan Peterson, MS*; Wayne D. Lord, PhD; Ross J. Miller, BA, MD; Mark R. McCoy, EdD; Timothy Dwyer, MSFS; Amber L. Fortney, MS; Sean Laverty</td>
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*Presenting Author
PATHOLOGY/BIOLOGY

4:45 PM – 5:00 PM  I75  The Perils of Body Size Assumption in Subadult Sibling Death Identifications
John B. Nase, DDS*

5:00 PM – 5:15 PM  I76  The Prevalence of Ethanol and Drugs Detected in Road Traffic Deaths: A Ten-Year Survey From Jefferson County, Alabama
Nicola Pigiai, MD*; Brandi C. McCleskey, MD; Daniel S. Atherton, MD; Daniel W. Dye, MD; Giacomo Musile, PhD; Federica Bertolotti, MD, PhD; Gregory G. Davis, MD, MSPH; Karen S. Scott, PhD

5:15 PM – 5:30 PM  I77  The Graveyard Spiral and the Day the Music Died
Edmund R. Donoghue, MD*

Thursday—Session III

Multidisciplinary Session: Pathology/Biology and Toxicology

Moderator: Robert Johnson, PhD  Co-Moderator: Rhonda Mittenzwei, MD

1:00 PM – 1:15 PM  L52  2C or Not Tusi? The Emergence of a New Drug Combination in Miami
Rocio Potoukian, BS*; Diane Moore, PhD; Kenneth Hutchins, DM

1:15 PM – 1:30 PM  L53  The Frequency and Analysis of Kratom in Postmortem Cases
William M. Schroeder, II, MS*; Donna M. Papsun, MS; Justin Brower

1:30 PM – 1:45 PM  L54  Postmortem Diagnosis of Ketoacidosis: The Importance of Beta-Hydroxybutyrate Quantification as Part of Routine Toxicological Screening at Autopsy
Jeroen Roosendaal, MSFS*; Astrid Christiaens, MD; Kiki Van Langen, MD; Ingrid Bosman, PhD, MSFS

1:45 PM – 2:00 PM  L55  A Case Series of Suicides by Sodium Azide Ingestion: An Update
Ingrid Bosman, PhD, MSFS*; Roelof Oosting, MD; Dick-Paul Kloos, MD; Bart Ruiter; Jeroen Roosendaal, MSFS; Kristof Maudens, MHA, BS

2:00 PM – 2:15 PM  I78  I Didn’t Want to Kill Him! The Role of Cocaine in Pseudoasphyxia by Compression of the Carotid Sinus
Eleonora Mezzetti, MD*; Matteo Leoni, MD; Andrea Costantino, MD; Carla Occhipinti, MD; Rebecca Pieretti, MD; Aniello Maiese, PhD

2:15 PM – 2:30 PM  I79  Not So Much the “Spice” of Life: Identifying a Source for a Series of MDMB-4en-PINACA Deaths
Michael Chaump, MD*; Robert Johnson, PhD; Aria McCall, BS; Kei Osawa, MFS; Steven J. Hemberger, DO; Mark E. Shelly; Richard Fries; Dana Hopson, MD

2:30 PM – 2:45 PM  I80  Elevated Beta-Hydroxybutyrate Within a Pediatric Population and Its Associated Pathology: A Retrospective Case Series
Nasim Haghandish, MDCM, PhD*; Chris Milroy, MD, LLB; Jacqueline Parai, MD; Anthea Lafreniere, MD

2:45 PM – 3:00 PM  I81  Pediatric Fatalities Due to Methadone Toxicity in Cook County, Illinois: Considerations on the Manner of Death
Lorenzo Gitto, MD*; Daniel S. Isenschmid, PhD; Ponni Arunkumar, MD

*Presenting Author
I82 Postmortem Interval Estimation Using MiRNAs: A Forensic Application
Paurabhi Singh, MSc*; Uma Shankar Singh, MD; Sangeeta Kumari, MD

I83 Recombinase Polymerase Amplification (RPA) for the Identification of Canine and Chicken Blood Samples
Julian L. Mendel*; Hanna Mellul; DeEtta Mills, PhD

I84 The Development of Real-Time and Digital PCR Kits for Simultaneous Quantification of Human and Bacterial DNA From Biological Evidence
Ji-Woo Lee*; Hye-Seon Cho; Ha-Eun Cha; A-Jeong Jeon; Si-Keun Lim

I85 A Retrospective Review of Genetic Testing and Its Impact on Cause of Death
Larissa Ybanez, BS, BA*; Stacey Murthy, MD

I86 The Impact of Mouthwash on Microbiome Associated With Human Saliva and Its Implication in a Bacterial Signature-Based Body Fluid Identification Method
Grace Cavanaugh, MS*; Baneshwar Singh, PhD*; James P. Brooks; Sarah Seashols Williams, PhD; Denise Wohlfahrt, PhD

I87 The Forensic Application of Monoclonal Anti-Human Glycophorin A (AntiGPA) Antibody in Samples From Decomposed Bodies to Establish Vitality of the Injuries: An Experimental Study
Benedetta Baldari, MD*; Elena Giacani, MD*; Giovanni Gurgoglione, MD; Jeannet Cappitelli, MD; Giovanni Pollice, MD; Francesca Carpano, MD; Paola Frati, MD*

I88 A Metagenomic Approach in Forensic Science for Human Identification Among a North Indian Population
Sangram Sandhu, MSc*; Niraj Rai, PhD; Pooran Chand, MDS

I89 An Extracorporeal Tissue Degradation Model to Investigate PMI Markers
Stefan Pittner, PhD; Eileen Holzer, BS*; Fabio Monticelli, PhD; Peter Steinbacher; Jane Harris, PhD

I90 When Immunohistochemistry Acquitted the Defendant: A Particular Scuba-Diving Death
Luca Sussetto, MD*; Elisa Olivetta, MD; Barbara Abenante, MD; Giancarlo Di Vella, MD, PhD*

I91 The Value and Versatility of Histology in the Forensic Autopsy: Changing Cases From Suspicious to Natural Causes
Joanne Hanna, BAS*; Yeliena Baber, FRCPath, FRCPath

I92 Evaluating the Spatial Relationship Between Microhemorrhages and Axonal Injury
Rhonda M. Mittenzwei, MD*; Heather Maioli, MD; Chiara Maffei, PhD; Karinn R. Sytsma, BA; Desiree Marshall, MD; Caitlin S. Latimer, MD, PhD; C. Dirk Keene, MD, PhD; Christine Mac Donald, PhD; Amber Nolan, MD, PhD; Brian Edlow, MD

I93 The Role of Thiols in Putrefaction: An Analysis of Biochemical Interactions in Forensic Cases
Isabella Aquila, PhD, MD*; Claudia Catia De Pasquale; Matteo Antonio A. Sacco, MD*; Maria Manno, MD; Saverio Gualtieri, MD; Lucia Tardo, MD; Luca Calanna, MD*; Maria Cristina Verrina, MD*; Wandamaria Mazzuca; Pietrantonio Ricci, PhD, MD
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td><strong>I94</strong> Iatrogenic Injuries Due to Endoscopic Techniques: The Role of Medicolegal Analysis for Forensic Purposes</td>
<td>Matteo Antonio A. Sacco, MD*; Maria Manno, MD; Angelica Zibetti, MD; Umberto Rosini, MD; Maria Cristina Verrina, MD*; Lucia Tarda, MD; Antonio Pallante, MD; Luca Calanna, MD; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I95</strong> Neonatal Traumatic Deaths: Differentiating Homicidal and Accidental Cases by a Multidisciplinary Approach</td>
<td>Aromatario Mariarosaria, MD PhD*; Benedetta Baldari, MD; Carpano Francesco, MD*; Moro Diego, MD*; Luigi Cipolloni, MD*; Fineschi Vittorio, MD, PhD*; Tartaglione Tommaso, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I96</strong> Post-Traumatic Intracranial Pseudo-Aneurysms of Posterior Circulation: Always a Challenge in the Forensic Field</td>
<td>Gabriele Napoletano, MD*; Fabio Del Duca, MD; Giacomo Visi, MD; Federica Spina, MD; Eleonora Mezzetti, MD; Alessandra De Matteis; Aniello Maiese, PhD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I97</strong> Analyzing the Past to Help Shape Our Children’s Futures: A Ten-Year Review of Pediatric Deaths in Arapahoe County, Colorado</td>
<td>Emma Selner, DO*; Casey Bitting, DO*</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I98</strong> Scuba Diving, Extreme Sports, and Undetected Cardiac Pathologies. Is There a Need for Further Clinical Examinations to Make These Activities Safer for Health?</td>
<td>Eleonora Mezzetti, MD*; Federica Spina, MD*; Ilaria Maracci, MD; Rebecca Pieretti, MD; Matteo Leoni, MD; Marco Di Paolo, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I99</strong> Death by Frostbite: From Theory to Reality</td>
<td>Stefano Duma, MD*; Federica Mele, MD; Mariagrazia Calvano, MD; Mirko leonardelli, MD; Enrica Macorano, MD; Giovanni De Gabriele, MD; Alessandro Cristalli, MD; Francesco Introna</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I100</strong> Too Hot to Handle: A Review of Carbon Monoxide Levels in Fire Fatalities</td>
<td>Olivia Ostermann, BS*; Stacey Murthy, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I101</strong> Smoke and Mirrors: A Bullet-less Intraoral Gunshot Wound</td>
<td>Nicole Burgin, BS*; Natasha Grandhi, MD; Sandra P. Reynolds, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I102</strong> The Management of Deaths in Railway Stations: Investigation Methodologies and Safety Prospects for Public Health</td>
<td>Matteo Antonio A. Sacco, MD*; Vincenzo Maria Ritorto, MD; Fabrizio Cordasco, MD; Carmen Scalise, PhD, MD; Maria Cristina Verrina, MD*; Roberto Raffaele*; Luca Calanna, MD*; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I103</strong> The Analysis of Gunshot Wounds in Gun Tests on Biological Matrices: An Experimental Study on Pig Heads</td>
<td>Isabella Aquila, PhD, MD*; Massimo Musardo; Massimo Lupo; Roberto Raffaele*; Matteo Antonio A. Sacco, MD*; Luca Calanna, MD*; Maria Cristina Verrina, MD*; Saverio Gualtieri, MD; Lucia Tarda, MD; Antonio Pallante, MD; Wandamaria Mazzuca*; Mariachiara Militi</td>
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<td><strong>I104</strong> WITHDRAWN</td>
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<td>11:30 AM – 1:00 PM</td>
<td><strong>I105</strong> Penile Torsion as a Method of Identification</td>
<td>Fernanda Da Silva lameira, MD*; Nicole M. Masian, MD; Wendy M. Gunther, MD</td>
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*Presenting Author
The Role of the Forensic Laboratory in the Investigation of Postmortem Cardiac Markers for the Diagnosis of the Cause of Death: A Comparison of Forensic Utilities
Matteo Antonio A. Sacco, MD*; Vincenzo Maria Ritorto, MD; Melanie Rouse, DPA; Jan Gorniak, DO; Maria Cristina Verrina, MD*; Luca Calanna, MD; Margherita Sgroi, MD; Serena Coda; Wandamaria Mazzuca*; Santo Gratteri, PhD, MD; Isabella Aquila, PhD, MD*

Forensic Entomology

Moderator: Lavinia Iancu, PhD Co-Moderator: Nicolette Ras, BS

8:30 AM – 8:45 AM I108 Necrophagous Insect Species Succession on Decomposed Pig Carcasses During North Dakota’s Summer Months
Lavinia Iancu, PhD*; Rebecca Simmons, PhD; Tiberiu Sahlean, PhD; Malia R. Wellens, BS; Ranjana Mosby, BS

8:45 AM – 9:00 AM I109 The Effects of Common Insecticides on Blow Fly (Diptera: Calliphoridae) Oviposition in the Field
Teomie S. Rivera-Miranda, BSc, MSc*; Krystal R. Hans, PhD

9:00 AM – 9:15 AM I110 It Boils Down to This: An Initial Evaluation, Using the Forensically Important Blow Fly Cochliomyia Macellaria, on the Usefulness of Gene Expression Following the Common Method of Boiling Larvae
Joshua Smith, PhD*

9:15 AM – 9:30 AM I111 Baits, Bodies, and Bugs: An Analysis of Forensic Entomology in Arizona
Lauren Weidner, PhD*; Andrew Meeds

9:30 AM – 9:45 AM I112 Feline Forensics: Revealing the Unique Decomposition and Forensically Relevant Blow Flies (Diptera: Calliphoridae) Associated With Cats
Kelly Bagsby, IMS, BS*, Krystal R. Hans, PhD

9:45 AM – 10:00 AM I113 How Can Forensic Entomology Contribute to Solving Rhinoceros Poaching in South Africa?
Ian R. Dadour, MSc, PhD*; Melanie Pienaar, BSc; Christopher W. Weldon, PhD

10:00 AM – 10:15 AM I114 Winter Decomposition in North Dakota and Vertebrate Scavengers
Lavinia Iancu, PhD*; Nicolette Ras, BS

10:15 AM – 10:30 AM BREAK

Forensic Entomology and Omics

Moderator: Ian Dadour, PhD Co-Moderator: Kristi Bugajski, PhD

10:30 AM – 10:45 AM I115 Assessing the Impacts of Prescription Medications and Metabolites on Larval Blow Fly Development
Hayden S. McKee-Zech, MSc*; Charity G. Owings, PhD; Dawnie W. Steadman, PhD

10:45 AM – 11:00 AM I116 A Decade Into Developing a Microbiome Tool for Predicting the Postmortem Interval: Where Are We Now and Where Are We Going?
Jessica Lynne Metcalf, PhD*; Zachary Burcham, PhD; Rob Knight, PhD; David O. Carter, PhD
PATHOLOGY/BIOLOGY

11:00 AM – 11:15 AM  I117 Understanding Seasonal Differences in Postmortem Microbiome Development for Forensic Practice
Anthony Grigsby*; Kelly Waters; M. Eric Benbow, BS, PhD; Jennifer L. Pechal, PhD; Bethany Mikles, BSc, MS

11:15 AM – 11:30 AM  I118 Microbiome Across the Pond: Decomposition in North Dakota Extreme Winter Temperatures Versus United Kingdom Summer Temperatures and Their Effect on the Microbiome for PMI Estimation
Noemi Procopio, PhD, MSc*; Lavinia Iancu, PhD*; Andrea Bonicelli, PhD, MA

11:30 AM – 11:45 AM  I119 Developing a Multi-Omics Bone Biomolecular Signature by Integrating Metabolomics, Lipidomics, and Proteomics to Estimate Postmortem Interval
Andrea Bonicelli, PhD, MA*; Noemi Procopio, PhD, MSc

11:45 AM – 12:00 PM  I120 A Metabolomics Investigation of Postmortem Human Pericardial Fluid
Alberto Chighine, MD*; Matteo Stocchero; Giulio Ferino, PhD; Fabio De-Giorgio, MD; Matteo Nioi, MD; Celeste Conte, MD; Ernesto d’Aloja, MD, PhD; Emanuela Locci, PhD

12:00 PM  – 1:00 PM  BREAK

Forensic Omics and Pathology/Biology Standards

Moderator: Noemi Procopio, PhD     Co-Moderator: Krystal Hans, PhD

1:00 PM  – 1:15 PM  I121 Infant Postmortem Microbiome Biomarkers: An Initial Survey
Jennifer L. Pechal, PhD*; Bethany Mikles, BSc, MS; Heather Jordan, PhD; M. Eric Benbow, BS, PhD; Carl Schmidt, MD, MPH

1:15 PM  – 1:30 PM  I122 A Longitudinal Study for PMI Estimation Via GC/MS Metabolomics Applied to Porcine Muscle Tissue
Andrea Bonicelli, PhD, MA*; Halima Al-Balushi, BSc; Zoha Khan-Perveen, BSc; Alberto Chighine, MD; Irene van Zwieten, BSc; Peter Cross, MSc; Noemi Procopio, PhD, MSc

1:30 PM  – 1:45 PM  I123 The Mass Grave Project: The Impact of Freezing and Burial on Personal Identification Through Human DNA Analysis
Sarah Gino, MD*; Giulia Squazzi, MA, BA; Moya McCarthy-Allen, BSc, MSc; Nicole Colombo; Daniel Wescott, PhD; Timothy P. Gocha, PhD; Noemi Procopio, PhD, MSc; Hayley L. Mickleburgh, PhD

1:45 PM  – 2:00 PM  I124 The Recovery of Corpses From Aquatic Environments: Procedural Standards to Maximize Evidence Recovery
Denise Gemmellaro, PhD*; Andrea Zaferes, BA*; Gloria Raise

2:00 PM  – 2:15 PM  I125 WITHDRAWN

2:15 PM  – 2:30 PM  I126 Standards Development Activities in Medicolegal Death Investigation and Forensic Pathology
J. Keith Pinckard, MD, PhD*

2:30 PM  – 2:45 PM  I127 Systematized International Capacity Development for Forensic Pathology in Low-Resource Jurisdictions: A Proposed Model
Alfredo Eugene Walker, MBBS*

*Presenting Author
# PATHOLOGY/BIOLOGY

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<td>2:45 PM – 3:00 PM</td>
<td>I128</td>
<td>2023 State Legislative Encroachments Against Forensic Pathology Professionalism and Independence: Harbingers of Future Threats and Opportunity for Strategic Planning and Action</td>
<td>M.J. Menendez, JD*; Joyce L. deJong, DO</td>
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<td>3:00 PM – 3:15 PM</td>
<td>I129</td>
<td>The 2022 NFLIS Medical Examiner and Coroner (MEC) Survey Findings</td>
<td>Kelly Keyes, BS*; DeMia P. Pressley, MS; Katherine Bollinger, MS; Hope M. Smiley-McDonald, PhD; Megan R. Waggy, MA, BA; Devon S. Cribb, MS</td>
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## Pathology/Biology Standards and Imaging

**Moderator:** Caroline Rowe, PhD  
**Co-Moderator:** Tuyet Tran, DO

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<td>3:30 PM – 3:45 PM</td>
<td>I130</td>
<td>Preserving the Silent Witnesses: Ensuring Long-Term Maintenance of Insect Evidence in Forensic Investigations</td>
<td>Ian R. Dadour, MSc, PhD*; Paola A. Magni, PhD; Martin J.R. Hall, PhD</td>
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<tr>
<td>3:45 PM – 4:00 PM</td>
<td>I131</td>
<td>The Toxic Workplace in Forensics</td>
<td>Paul S. Uribe, MD*</td>
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<td>4:00 PM – 4:15 PM</td>
<td>I132</td>
<td>But What Does It Mean? A Rationale for a Standardized Means of Death Classification System</td>
<td>Sarah Anderson, DO*; Katarina M. Volkoff; Brandi C. McCleskey, MD</td>
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<td>4:15 PM – 4:30 PM</td>
<td>I133</td>
<td>Plastic Bag Suffocation: A Case Series and an Effective Protocol Proposal</td>
<td>Anna Maria Manta, MD*; Benedetta Baldari, MD*; Stefania De Simone, MD*; Pia Eugenia Ylenia Petrasso, MD*; Gianluca Piras, MD*; Luigi Cipolloni, MD*; Valentina Milone, MD</td>
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<td>4:30 PM – 4:45 PM</td>
<td>I134</td>
<td>A Case of Ductus Venosus Agenesis (DVA) in a Stillborn Baby: The Postmortem Computed Tomography (CT) Scan and Autopsy Findings</td>
<td>Martina Demasi, MD*; Chiara Franzetti, MD; Luisa Andrello, MD, PhD; Matteo Moretti, MD; Rosa Maria Martinez</td>
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<td>4:45 PM – 5:00 PM</td>
<td>I135</td>
<td>Minimally Invasive Postmortem Autopsies Using CT-Guided Biopsies in Suspected Cases of Pneumonia: A Feasibility Study</td>
<td>Yonatan Carl, MD*; Jamie Elifritz, MD; Micheal Harrell, MD; Kethery Haber, MHA, BS; Sarah Lathrop, DVM, PhD; Lauren Dvorscak, MD</td>
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<td>5:00 PM – 5:15 PM</td>
<td>I136</td>
<td>An Analysis of Autopsy-Radiology Discordance in Cases of Fatal Blunt Force Injury</td>
<td>Natalie L. Adolphi, PhD*; Yi-Li Grace Wong, MD; Jamie Elifritz, MD</td>
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<td>J1</td>
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<td>11:30 AM – 1:00 PM</td>
<td>J2</td>
<td>A Polygraph Examination of a Rape and Murder Suspect: A Case Study</td>
<td>Aabad Ayoub, MPhil*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>J3</td>
<td>Internet Gaming Disorder: An Invisible Addiction With Real Damage</td>
<td>Adriana Scuotto*; Pascale Basilicata; Valentina Battimilrello*; Dario Bruzzese, PhD; Anita Sammarco, MD; Gaetano Di Donna, MD; Massimo Niola, PhD; Maria Pieri</td>
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<td>11:30 AM – 1:00 PM</td>
<td>J8</td>
<td>The Treatment Decision-Making Capacity (TDMC) in Children and Adolescents Undergoing Orthopedic Surgery: A Comparison With Their Parents</td>
<td>Gabriele Mandarelli*; Cristina Caterino, DM; Daniela Dibello; Michele Pellegrini; Marcello Benevento, MD; Davide Fereorelli; Giulia Petroni; Angelo Di Giovanni, MD; Felice Francesco Carabellise, MD; Roberto Catanese; Biagio Solarino</td>
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<td>11:30 AM – 1:00 PM</td>
<td>J9</td>
<td>Adverse Childhood Experiences and Antisocial Behavior Among Incarcerated Individuals: Unveiling the Link and Implications for Mental Health Support in Correctional Facilities</td>
<td>Sanya Gaur*; Jagmahender Singh Sehrawat, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>J10</td>
<td>Brainwashing in Cults: Sexual Abuse and Delayed Treatment Until It Is Too Late</td>
<td>Caterina Bosco, MD; Lucia Tattoli, MD, PhD*; Cristiano Barbieri, PhD; Ignazio Grattagliano*; Gabriele Rocca; Giancarlo Di Vella, MD, PhD*</td>
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**Around The Forensic Psychiatry World in Sickness and in Health**

**Moderator:** Corina Freitas, MD, BSc, MBA **Co-Moderator:** G. David Annas, MD, MPH

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<td>9:00 AM – 9:30 AM</td>
<td>J11</td>
<td>When Forensic Patients Want to Cross the Border: The Canadian Experience</td>
<td>Sebastien S. Prat, MD*; Lauren Barney, BA, JD</td>
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<tr>
<td>9:30 AM – 10:00 AM</td>
<td>J12</td>
<td>Fitness to Stand Trial Under Canadian Criminal Law: A New Leaf After Bharwani</td>
<td>Lauren Barney, BA, JD*; Sebastien S. Prat, MD*</td>
</tr>
<tr>
<td>10:00 AM – 10:30 AM</td>
<td>J13</td>
<td>Competence to Stand Trial Training in Forensic Psychiatry Fellowships</td>
<td>Faiz Kidwai, DO*; George D. Annas, MD, MPH</td>
</tr>
<tr>
<td>10:30 AM – 10:55 AM</td>
<td>J14</td>
<td>Exploring the Intersection of Mental Health and the Criminal Justice System in the United Kingdom</td>
<td>Claire Power, MSc*; Fiona Wilcox, MD, CPE; Richard Walters, LLB; Nikolas Lemos, PhD</td>
</tr>
<tr>
<td>10:55 AM – 11:00 AM</td>
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<td>BREAK</td>
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<tr>
<td>11:00 AM – 11:30 AM</td>
<td>J15</td>
<td>Trauma Responses and Coping Mechanisms in the Field of Forensics</td>
<td>Brianna Simental, MS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*</td>
</tr>
</tbody>
</table>
PSYCHIATRY & BEHAVIORAL SCIENCE

11:35 AM – 11:50 AM  J16  **Health and Wellness: A Study Assessing Stress Using Physiological and Self-Reported Data Among Medicolegal Death Investigators**  
Jennifer Rineer, PD*; Kelly Keyes, BS; Crystal Daye, MPA; Sean Wire, ABD; Avonne J. Armbrister, MPH; Julia Brinton, MA

11:50 AM – 1:00 PM  BREAK

**Institutional Forensics**

<table>
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<tr>
<th>Time</th>
<th>Session</th>
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| 1:00 PM – 2:00 PM | J17  **Upholding the Constitutional Standard of Care: Correctional Mental Health Monitoring and Investigational Expert Work Across the Spectrum of Detention Centers**  
Kahlil Johnson, MD*; Corina Freitas, MD, MBA |
| 2:00 PM – 2:30 PM | J18  **Barriers to the Great Outdoors: Balancing Psychiatric Patients’ Rights and Safety**  
Robert Polo, MD* |
| 2:30 PM – 2:55 PM | J19  **Has CARE-ing Gone Too Far? An Overview of California’s Controversial “CARE Court” for Outpatient Civil Commitment**  
Collin Shumate, MD* |
| 2:55 PM – 3:45 PM | J20  **Bridging the Divide: A Comparative Analysis of Military and Civil Forensic Psychiatry**  
John F. Chaves, MD* |
| 3:45 PM – 4:00 PM | BREAK |
| 4:00 PM – 5:00 PM | J21  **Not Guilty by Reason of Insanity (NGRI) for Florida Teen Who Murdered Two Strangers and Engaged in Cannibalism: Implications for Forensic Mental Health Professionals**  
Emily D. Gottfried, PhD*; Christopher Fields, MD*; Edward Thomas Lewis, MD*; Diana Mullis, MD* |

**Friday**

**Poster Session**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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| 11:30 AM – 1:00 PM | J22  **Catfish: How the Internet Can Lead to a Double Tragedy**  
Lucia Tattoli, MD, PhD; Cristiano Barbieri, PhD; Caterina Bosco, MD; Ignazio Grattagliano*; Giancarlo Di Vella, MD, PhD* |
| 11:30 AM – 1:00 PM | J23  **Evaluating Handwriting Variance in the Detection of Deception: An Exploratory Study of Qualitative and Quantitative Approaches**  
Heidi H. Harralson, MA*; Hans-Leo Teulings, PhD; Larry S. Miller, PhD |
| 11:30 AM – 1:00 PM | J24  **Medicolegal Investigations in Cases of Death Due to Escape From Health Care Facilities in Psychiatric Subjects: The Management of the Prevention of Fatal Events**  
Matteo Antonio A. Sacco, MD*; Valerio Riccardo Aquila; Maria Cristina Verrina, MD*; Luca Calanna, MD; Pietrantonio Ricci, PhD, MD; Raffaele La Russa, MD, PhD; Isabella Aquila, PhD, MD* |
| 11:30 AM – 1:00 PM | J25  **On Pathological Religiosity: Technical Reflection Points From an Expert Case Study**  
Cristiano Barbieri, PhD; Ignazio Grattagliano; Pagani Kimberly, MSL; Anna Cassano; Maria Grazia Vialante, LM; Roberta Risola, MD; Eleonora Murani; Lucia Tattoli, MD, PhD; Caterina Bosco, MD; Giancarlo Di Vella, MD, PhD* |

*Presenting Author
PSYCHIATRY & BEHAVIORAL SCIENCE

11:30 AM – 1:00 PM  J26  Self-Stigma in Alcohol Use Disorder in the Context of a Fitness-to-Drive Medical Assessment  
Cristian Palmiere, MD, PhD*; Maria Pia Scarpelli, MD

11:30 AM – 1:00 PM  J27  Serial Killers: Does Gender Make a Difference?  
Trasey Roby, MS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*

11:30 AM – 1:00 PM  J28  The Importance of Surveillance and Storage of Drugs in Prison  
Matteo Antonio A. Sacco, MD*; Fabrizio Cordasco, MD; Valerio Riccardo Aquila;  
Carmen Scalise, PhD, MD; Maria Cristina Verrina, MD*; Luca Calanna, MD;  
Alessandro Pasquale Tarallo, MD*; Giulio Pulitto, MD*; Marinika Salasco;  
Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*

11:30 AM – 1:00 PM  J29  The Influence of Traumatic Life Events and Subsequent Psychopathology on Recidivism:  
A Critical Review  
Sanya Gaur*; Jagmahender Singh Sehrawat, PhD

11:30 AM – 1:00 PM  J30  The Role of Graphology in Forensic Investigations in Cases of Imputability Assessment  
Through the Analysis of the Writings of Prisoners  
Palmo Tavernese; Lucia Tarda, MD; Matteo Antonio A. Sacco, MD*; Valerio Riccardo Aquila;  
Maria Cristina Verrina, MD*; Luca Calanna, MD; Wandamaria Mazzuca;  
Pietrantonio Ricci, PhD, MD; Felice Francesco Carabellesse, MD; Isabella Aquila, PhD, MD*

Psychiatry & Behavioral Science

Moderator:  Grace Cheney, MD  Co-Moderator:  Michael Hernandez, BS

9:00 AM  –  9:30 AM  J31  Does Violent Pornography Beget Real-World Violence?  
Jeffrey M. Sanders, MD, MHA*

9:30 AM – 10:00 AM  J32  Munchausen by Proxy Syndrome: When We Dare and Why We Dare to Care  
Mariagrazia Marisei, MD*; Pascale Basilicata; Angela Simonelli; Angela Silvestre, PhD;  
Anita Sammarco, MD; Gaetano Di Donna, MD; Massimo Niola, PhD; Maria Pieri

10:00 AM – 10:15 AM  BREAK

10:15 AM – 10:45 AM  J33  Suicide Notes: Postmortem Analysis and Preventive Considerations  
Eugenio Jacopo Piero Gallotti, MD*; Giacomo Belli, MD; Veronica Sala, DM;  
Mateus E. Romao, MSc; Bjord Hasbulla, MD; Greta Seveso, DM; Gianmarco Argentiero, MD;  
Luca Morini, PhD; Gulnaz T. Javan, PhD; Silvia D. Visonà, MD, PhD

10:45 AM – 11:45 AM  J34  Neuroscience in the Courtroom  
Octavio Choi, MD, PhD*; Grace Cheney, MD; Gayathri J. Dowling, PhD; Michael Hernandez, MD

11:45 AM –  1:00 PM  BREAK

Multidisciplinary Forensic Psychopharmacology: Treatment Updates, Toxicology, Pathology, Legal, and  
Medical Ethical Considerations

Moderator:  Vivian Shnaidman, MD

1:00 PM – 4:30 PM  J35  Advancing Forensic Psychopharmacology: A Comprehensive Update for Forensic Scientists  
Corina Freitas, MD, MBA*; Anita Rajkumar, MD; George D. Annas, MD, MPH

*Presenting Author
QUESTIONED DOCUMENTS

Thursday

Poster Session

11:30 AM – 1:00 PM K1 A Comparative Analysis of Wet Ink and Digitally Captured Handwriting: Real-World Applications
Steven N. Bunch, BS*; Heidi H. Harralson, MA; Larry S. Miller, PhD

11:30 AM – 1:00 PM K2 Estimating Sufficiency of the Pairwise Euclidean Distance on Sets of Handwritten Documents
Cami Fuglsby, PhD*; Christopher P. Saunders, PhD; Danica M. Ommen, PhD; JoAnn Buscaglia, PhD

11:30 AM – 1:00 PM K3 The Mozart Scribe: Applying Forensic Handwriting Examination Methods to Identify Scribes in 18th-Century Music Calligraphy Manuscripts
Martin W. Jarvis, PhD; Heidi H. Harralson, MA*

11:30 AM – 1:00 PM K4 WITHDRAWN

Questioned Documents Technical Session I

Moderator: Linda Mitchell, BS

8:30 AM – 8:50 AM K5 A Conservation Approach to Thermal Printer Ribbon Preservation and Imaging
Tobin A. Tanaka, BSc*; Caroline Bernier; Sincere Ip, MSc; Helen Kolodziejczyk, MSc,FSc

8:50 AM – 9:10 AM K6 A Study of Natural Variations in Handwritten Signatures: Implications in Forensic Examinations
Rakesh Meena, MSc*; Nandini Chitara, MSc; Ankita Guleria, MSc; Kewal Krishan, PhD; Abhik Ghosh, PhD

9:10 AM – 9:30 AM K7 Above and Beyond: Examining “Hidden” Features in Travel and Identity Documents
Carolyn Bayer-Broring, MFS*

9:30 AM – 9:45 AM K8 A Cleaner Cascade Method for EDD: Toner Developer Guides
Mark Goff, BA*

9:45 AM – 10:00 AM K9 The Characterization and Identification of Historical Inks and Their Colorants
Sarah Mosinski*; Jordyn Guse; Ethan Groves, BS; Katie M. White, MSc; Skip Palenik, BS; Christopher S. Palenik, MS, PhD

10:00 AM – 10:30 AM K10 Using Variable Light Source Technology to Support World War II Service Member Identification
Sarah C. Kindschuh, PhD*; Larkin Kennedy, PhD

10:30 AM – 10:45 AM BREAK

Moderator: Linda Mitchell, BS

10:45 AM – 11:05 AM K11 Attempts to Clone Stamp Impressions Via Stamps Produced by Additive Manufacturing
Tobin A. Tanaka, BSc*

11:05 AM – 11:25 AM K12 Bad Things Can Happen to Good Signatures
Linton Mohammed, PhD*
## QUESTIONED DOCUMENTS

11:25 AM – 11:45 AM  **K13**  Chemometric and Spectroscopic Approaches in Questioned Document Examination  
*Vishal Sharma, PhD*

11:45 AM – 12:15 PM  **K14**  FDE Forum  
*Carl R. McClary, MS*; *Karen J. Nobles, MS*; *Samiah Ibrahim, BSc, BA*

12:15 PM – 1:15 PM  **BREAK**

### Questioned Documents Technical Session II

**Moderator:** Mark Goff, BA  
**Co-Moderator:** Linda Eisenhart

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<th>Session</th>
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<th>Presenters</th>
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<tbody>
<tr>
<td>1:15 PM – 1:30 PM</td>
<td><strong>K15</strong></td>
<td>Forensic Digital Document Examination: Moving Forward in a Post-Pandemic Society</td>
<td><em>Timothy Campbell, BSc</em></td>
</tr>
<tr>
<td>1:30 PM – 1:45 PM</td>
<td><strong>K16</strong></td>
<td>Quantifying Bayes Factors for Forensic Handwriting Evidence</td>
<td><em>Anyesha Ray, BS</em>; <em>Danica M. Ommen, PhD</em></td>
</tr>
<tr>
<td>1:45 PM – 2:15 PM</td>
<td><strong>K17</strong></td>
<td>Quantifying Writer Variance Through Rainbow Triangle Graph Decomposition</td>
<td><em>Alexandra Arabio, BS</em>; <em>Alicia Laura Carriquiry, PhD</em>; <em>Danica M. Ommen, PhD</em></td>
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<tr>
<td>2:15 PM – 2:35 PM</td>
<td><strong>K18</strong></td>
<td>The Collection and Characterization of Counterfeit State Identity Cards and Driver’s Licenses at the Homeland Security Investigations Forensic Laboratory</td>
<td><em>Luther S. Schaeffer, MFS</em>; <em>Elaine X. Wooton, MFS</em></td>
</tr>
<tr>
<td>2:35 PM – 2:55 PM</td>
<td><strong>K19</strong></td>
<td>The Discrimination and Characterization of Computer-Generated Printed Documents Using Energy-Dispersive X-Ray Fluorescence Spectroscopy Coupled With Chemometrics</td>
<td><em>Neha Verma, MSc, PhD</em>; <em>Vishal Sharma, PhD</em>; <em>Dinesh K. Sahu, MSc, PhD</em></td>
</tr>
<tr>
<td>2:55 PM – 3:25 PM</td>
<td><strong>K20</strong></td>
<td>The Hitler Diaries Revisited</td>
<td><em>Thomas W. Vastrick, BSc</em></td>
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<td>3:25 PM – 3:40 PM</td>
<td><strong>BREAK</strong></td>
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**Moderator:** Linda Eisenhart  
**Co-Moderator:** Mark Goff, BA

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<tr>
<td>3:40 PM – 4:25 PM</td>
<td><strong>K21</strong></td>
<td>A Framework for the Creation of QuompenDium—The Mega-Site for All Things QD</td>
<td><em>Zain Bhaloo, MSc, BScH</em></td>
</tr>
<tr>
<td>4:25 PM – 4:55 PM</td>
<td><strong>K22</strong></td>
<td>A Proposal to Update SWGDOC Standards During the Transition Period: A Discussion</td>
<td><em>Thomas W. Vastrick, BSc</em></td>
</tr>
<tr>
<td>4:55 PM – 5:15 PM</td>
<td><strong>K23</strong></td>
<td>An Update on Standards Development Activities Related to Forensic Document Examination</td>
<td><em>Kevin P. Kulbacki, MSFS</em></td>
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<tr>
<td>5:15 PM – 6:00 PM</td>
<td><strong>K24</strong></td>
<td>New ASB Standards for Forensic Document Examiners: How They Differ From the Standards They Superseded and What You Need to Know to Use Them</td>
<td><em>Mark Goff, BA</em>; <em>Stephanie Kingsbury, MSFS</em></td>
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*Presenting Author*
### TOXICOLOGY

#### Wednesday

**Poster Session**

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<th>Time</th>
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<th>Authors</th>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L1</td>
<td>Comparing the Performance of LC-QqQ-MS vs. LC-QTOF-MS for Targeted Analysis of NPS With a Test Mixture of 40 NPS and Metabolites in Whole Blood, Urine, and Oral Fluid</td>
<td>Rebecca L. Smith, MS*; Anthony P. DeCaprio, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L2</td>
<td>4-Substituted AH-7921 Analogs: Isomer Selection During Synthesis and Pharmacological Profile</td>
<td>John L. Krstenansky, PhD, MBA*</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L3</td>
<td>A Rare Case of Fatal Levamisole Toxicity</td>
<td>Mark E. Shelly, DO*; Robert Johnson, PhD; Aria McCall, BS</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L4</td>
<td>A Mass Disaster Caused by Gas Leaks: A Case Report and a Forensic Workflow Proposal</td>
<td>Massimiliano Esposito, MD*; Federica Ministeri, MD; Salvatore Roccuzzo, MD; Nunziata Barbera, MD; Fabrizio Vanaria</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L5</td>
<td>Postmortem Redistribution in Forensic Toxicological Investigations</td>
<td>Pietro Zuccarello, PhD*; Monica Salerno, MD; Massimiliano Esposito, MD; Francesco Sessa, MS, PhD; Nunziata Barbera, MD</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L6</td>
<td>My Way: A Case of Lethal Intoxication of an Animal Euthanasia Drug in a Veterinary Doctor</td>
<td>Gianluca Musci, MD*; Alessandra Petruzzellis, MD; Gianluca Gravili, MD; Giorgio De Donno, MD; Stefania Galizia, MD; Gianfrancesco Di Nunno, MD; Antonio De Donno, MD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L7</td>
<td>A Ten-Year (2013–2022) Retrospective Analysis of Road Traffic Deaths in the Northern Italian Region of Campania</td>
<td>Anna Carfora, PhD; Alessandro Feola, MD, PhD*; Raffaella Petrella, PhD; Giusy Ambrosio, MD; Stefano Festinese, MD; Ilaria Fracassi, MD; Paolo Palermo, MD; Martina Zampone, MD; Carlo Pietro Campobasso, MD, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L8</td>
<td>Trends in Neonatal Deaths From Fentanyl</td>
<td>Emily Fenton, MBA, MSFS*; Kari M. Midthun, PhD; Brianna Peterson, PhD</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L9</td>
<td>WITHDRAWN</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L10</td>
<td>A Complete Review of Propofol Misuse in the Health Care System and as a Drug of Abuse</td>
<td>Jidabha Apiluk, BS; Sajeel Shah, PhD*; Nikolas P. Lemos, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L11</td>
<td>A Retrospective Analysis of Results From United States Court-Ordered Mandatory Drug Testing of Oral Fluid and Hair and the Impacts of Expanding the Testing Scope for Fentanyl and Fentanyl-Related Compounds</td>
<td>Jeri D. Ropero-Miller, PhD*; Megan Grabenauer, PhD; Nichole D. Bynum, MS; Nicolas Richardson, PhD</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L12</td>
<td>Drops of Insanity? Tropicamid Recreational Usage: Early Warning Alarms in Forensic Science</td>
<td>Sushil Bhatt, m, PGDST*; Jagmahender Singh Sehrawat, PhD; Vishali Gupta, MS</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L13</td>
<td>Biofluid Sampler: A Promising Sampling and Sample Preparation Platform for Forensic Toxicological Investigations</td>
<td>Abuzar Kabir, PhD*; Marcello Locatelli, PhD; Kenneth G. Furton, PhD</td>
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</table>
7:30 PM – 9:00 PM  L14  Quantitation of Delta-8-Tetrahydrocannabinol in Postmortem Specimens by the Method of Standard Addition
Robert M. Lockwood, PhD*; Taikeria Adams, BS; Curt E. Harper, PhD

7:30 PM – 9:00 PM  L15  Fabric Phase Sorptive Extraction: A Green Sample Preparation Strategy for Forensic Toxicology
Abuzar Kabir, PhD; Kenneth G. Furton, PhD*; Marcello Locatelli, PhD

7:30 PM – 9:00 PM  L16  A Comparative Analysis of Accuracy, Precision, and LOD in AAS and TMA for the Quantification of Cadmium in the Blood Samples
Jatin Kumar Drall, BTech*; Ajay Kumar Kataria, MTech

7:30 PM – 9:00 PM  L17  The Determination of Cadmium in Blood by Voltammetry Using Hanging Mercury Drop Electrode (HMDE)
Ashok Kumar Jaiswal, PhD*

7:30 PM – 9:00 PM  L18  Identifying Designer Benzodiazepines in Blood Using Gas Chromatography/Mass Spectrometry
Devin Baer*; Michael T. Truver, PhD; Sara C. Brogan, BS; Jennifer L. Hoyer, MS; Michele Crosby; Chris W. Chronister, PhD

7:30 PM – 9:00 PM  L19  The Impact of Gold Top SST (Gel and Clot) Collection Tubes on Cannabinoid Quantitative Analysis in Blood
Bridget O’Leary, MS; Marta Concheiro-Guisan, PhD*

7:30 PM – 9:00 PM  L20  Designer Benzodiazepine ELISA Cross-Reactivity
Leonela M. Placencia, BS*; Nicholas B. Tiscione, MS

7:30 PM – 9:00 PM  L21  EC-SERS and DART®-TOF/MS for Toxicological Screening
Colby E. Ott, PhD*; Edward Sisco, PhD

7:30 PM – 9:00 PM  L22  A Validated Method for Quantification of Buprenorphine/Naloxone and Its Primary Metabolites in Clinical Human Breast Milk, Maternal and Infant Plasma Samples Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)
Munchelou M. Gomonit, BS*; Krystle McConnnell, BA, MPH; Lauren M. Jansson, MD; Madeleine J. Swortwood, PhD

7:30 PM – 9:00 PM  L23  An Evaluation and Comparison of the Evidence MultiSTAT to GC/MS for the Detection of Morphine, Codeine, and Thebaine in Urine and Oral Fluid
Amanda L. Pacana, BS, MSFS*; Britni Skillman, PhD; Madeleine J. Swortwood, PhD; Stacie Terry, MSFS

7:30 PM – 9:00 PM  L24  An Investigation of Phthalate Levels in Teething Devices for Children in the United Arab Emirates
Vipula Aravamudhan*; Nrashant Singh; Deveshi Kachroo; Noora Najeeb

7:30 PM – 9:00 PM  L25  The Validation of an LC/QqQ/MS Method for the Detection of Single Doses of Drugs in Hair
Kaylyn Ann Keith*; Anthony P. DeCaprio, PhD

7:30 PM – 9:00 PM  L26  The Development of a Reference Material for Chemical Hair Analysis
Kaitlyn Bonilla, BS*; Charlene Harris, BS; Chloe Phillips; Matthieu Baudelet, PhD

7:30 PM – 9:00 PM  L27  Streamlining Blood LC/MS/MS Workflows to Meet ASB/OSAC Recommendations for Medicolegal Death and Impaired Driving Cases
Jason Truskowski, BS*
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<td>7:30 PM – 9:00 PM</td>
<td>L28</td>
<td>Streamlining Urine LC/MS/MS Workflows to Meet ASB/OSAC Recommendations for Drug-Facilitated Crime Investigations</td>
<td>Jason Truskowski, BS*</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L29</td>
<td>“Hang on a Minute”: Developing Improved Separation Methodologies for Weakly Retained Polar Molecules in LC/MS/MS</td>
<td>Briana Rose Alarcon, BS*; William H. Campbell, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L30</td>
<td>The Separation of Fentanyl Analogs and Fentanyl Analog Isomers by LC/MS/MS</td>
<td>Erika L. Sitch, MPS*; Briana Rose Alarcon, BS*; William H. Campbell, PhD</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L31</td>
<td>What Are You Smoking? A Derivatization to Improve the Analysis of Tetrahydrocannabinol (THC) Isomers Via LC/MS/MS</td>
<td>Olesia Leonna Headen*; William H. Campbell, PhD</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L32</td>
<td>The Quantitation of 106 Drugs in Urine Using a High-Throughput, Seven-Minute Method by High Resolution Mass Spectrometry and Triple Quadrupole</td>
<td>Courtney Patterson*; Mark Tracy; Kristine van Natta; Stephanie Samra; Kerry Hassell</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L33</td>
<td>Urine Immunoassay Cross-Reactivity of Various OTC and Prescription Drugs</td>
<td>Fatima Chavez-Esparza, BS*; Courtney Sellens, MS, BS; Qiyang Zhang, PhD; Melissa M. Bailey, MSFS, PhD; Timothy P. Rohrig, PhD; Connor DeJesus, MS, BS</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L34</td>
<td>Don’t Huff Before You Blow!</td>
<td>Genevieve Huppe, MSc*; Julie Motard, MSc; Cynthia Roy, MSc; Anthony Gelinas, BSc; Pascal Mireault, MSc</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L35</td>
<td>Evaluating Drug Positivity Trends in Fatally Injured Drivers, Passengers, and Pedestrians in Connecticut</td>
<td>Amanda L.A. Mohr, MS*; Grace Cieri, BS; James R. Gill, MD; Barry K. Logan, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L36</td>
<td>Drivers Under the Influence of Alcohol and Drugs: A Six-Year (2017–2022) Retrospective Analysis in a Southern Italian Region</td>
<td>Anna Carfora, PhD; Alessandra Feola, MD, PhD*; Raffaella Petrella, PhD; Giusy Ambrosio, MD; Ilaria Fracassi, MD; Paolo Palermo, MD; Martina Zampone, MD; Carlo Pietro Campobasso, MD, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L37</td>
<td>Pediatric Poisoning: A Plan of Action for Early Diagnosis and Treatment</td>
<td>Pascale Basilica; Mariagrazia Marisei, MD; Rossella Guadagni; Angela Simonelli; Gaetano Di Donna, MD, AN; Anita Sammarco, MD; Massimo Niola, PhD; Maria Pieri*</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L38</td>
<td>The Effects of Ethanol on GABA Catabolism Via GABA-Transaminase</td>
<td>Mary Corrigan*; Robert H. Powers, PhD</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L39</td>
<td>Crotalus Snake Venoms of North and South America: Their Symptoms, Treatments, and Potential Medical Applications</td>
<td>Victoria Hudson, MSc*; Sajeel Shah, PhD, MS; Nikolas P. Lemos, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L40</td>
<td>A Review of Popular Illegal Performance-Enhancing Drugs in Sports and Gyms</td>
<td>Rami Abbas, BS*; Sajeel Shah, PhD, MS; Nikolas P. Lemos, PhD</td>
</tr>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L41</td>
<td>An Evaluation of Long-Term Health Effects From Acute Exposure to Toxic Chemicals</td>
<td>Theresa Pennington*</td>
</tr>
</tbody>
</table>
## TOXICOLOGY

7:30 PM – 9:00 PM  **L42**  Future Strategies in Drug Trend Monitoring and Harm Reduction  
*Agieszka Urban, BSc*; *Geraldine Dowling, PhD, MSc; Sajeel Shah, PhD, MS; Nikolas P. Lemos, PhD*

7:30 PM – 9:00 PM  **L43**  A Review of Factors Affecting the Interpretability of Postmortem Cannabinoid Concentrations and Their Limitations  
*Sherri L. Kacinko, PhD; Daniel S. Isenschmid, PhD; Barry K. Logan, PhD*

### Thursday

#### Annual Lectureship in Toxicology

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 8:30 AM – 9:45 AM | **L45**  Annual Lectureship in Toxicology  
*Brandon Jeffery, MS* |
| 9:45 AM – 10:15 AM | **L46**  An Update on Standards Development Activities in Forensic Toxicology  
*Marc A. LeBeau, PhD* |
| 10:15 AM – 10:30 AM | BREAK |

#### Novel Psychoactive Substances

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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| 10:30 AM – 10:45 AM | **L47**  Quantitation of Hexahydrocannabinol and Metabolites in Blood From Recreational Users  
*Robert Kronstrand, PhD*; *Markus Roman*; *Henrik Gréen*; *Michael T. Truver, PhD* |
| 10:45 AM – 11:00 AM | **L48**  Determining Delta 9-THC Acetate Analog Metabolites Using Human Liver Microsomes to Determine the Structure and Rate of Metabolism  
*Natalie Ortiz, BS*; *Justin L. Poklis, BS*; *Kimberly Karin, MS*; *Grace R.R. Williams, PhD*; *Carl E. Wolf, PhD* |
| 11:00 AM – 11:15 AM | **L49**  The Metabolism of THC-O-Acetate (THCO)—An Emerging Drug Threat  
*Ya-Chih (Jessica) Cheng, MS*; *Charles R. Perkins, MS, BS*; *Sarah Kerrigan, PhD* |
| 11:15 AM – 11:30 AM | **L50**  A Quantitative Confirmation Assay of New and Emerging Synthetic Cannabinoids by LC/QqQ/MS  
*Haley Lynn Bibey, BS*; *Sara Walton, MS*; *Heather L. Harris, MFS, JD*; *Alex J. Krotulski, PhD* |
| 11:30 AM – 11:45 AM | **L51**  A Case Series Involving the Synthetic Cathinone Alpha-PiHP in Postmortem Forensic Investigations  
*Sara Walton, MS*; *Donna M. Papsun, MS*; *Michael E. Lamb, MSFS, BS*; *Alex J. Krotulski, PhD*; *Simon Elliott, BSc, PhD*; *Kerry Taylor, BSc*; *Michael T. Truver, PhD*; *Barry K. Logan, PhD* |
| 11:45 AM – 1:00 PM | BREAK |

*Presenting Author*
Multidisciplinary Session: Pathology/Biology and Toxicology

Moderator: Robert Johnson, PhD
Co-Moderator: Rhonda Mittenzwei, MD

1:00 PM – 1:15 PM

L52 2C or Not Tusi? The Emergence of a New Drug Combination in Miami
Rocio Potoukian, BS*; Diane Moore, PhD; Kenneth Hutchins, DM

1:15 PM – 1:30 PM

L53 The Frequency and Analysis of Kratom in Postmortem Cases
William M. Schroeder, II, MS*; Donna M. Papsun, MS; Justin Brower

1:30 PM – 1:45 PM

L54 Postmortem Diagnosis of Ketoacidosis: The Importance of Beta-Hydroxybutyrate Quantification as Part of Routine Toxicological Screening at Autopsy
Jeroen Roosendaal, PhD*; Astrid Christiaens, MD; Kiki Van Langen, MD; Ingrid Bosman, PhD, MSFS

1:45 PM – 2:00 PM

L55 A Case Series of Suicides by Sodium Azide Ingestion: An Update
Ingrid Bosman, PhD, MSFS*; Roeof Oosting, PharmD; Dick-Paul Kloos, PhD; Bart Ruiter; Jeroen Roosendaal, PhD; Kristof Maudens, PhD

2:00 PM – 2:15 PM

I78 I Didn't Want to Kill Him! The Role of Cocaine in Pseudoasphyxia by Compression of the Carotid Sinus
Eleonora Mezzetti, MD*; Matteo Leoni, MD; Andrea Costantino, MD; Carla Occhipinti, MD; Rebecca Pieretti, MD; Aniello Maiese, MD

2:15 PM – 2:30 PM

I79 Not So Much the “Spice” of Life: Identifying a Source for a Series of MDMB-4en-PINACA Deaths
Michael Chaump, MD*; Robert Johnson, PhD; Aria McCall, BS; Kei Osawa, MFS; Steven J. Hemberger, DO; Mark E. Shelly; Richard Fries; Dana Hopson, MD

2:30 PM – 2:45 PM

I80 Elevated Beta-Hydroxybutyrate Within a Pediatric Population and Its Associated Pathology: A Retrospective Case Series
Nasim Haghandish, MDCM, PhD*; Chris Milroy, MD, LLB; Jacqueline Parai, MD; Anthea Lafreniere, MD

2:45 PM – 3:00 PM

I81 Pediatric Fatalities Due to Methadone Toxicity in Cook County, Illinois: Considerations on the Manner of Death
Lorenzo Gitto, MD*; Daniel S. Isenschmid, PhD; Ponni Arunkumar, MD

3:00 PM – 3:15 PM

BREAK

Drugs and Driving Special Session

Moderator: Marilyn Huestis, PhD
Co-Moderator: Curt Harper, PhD

3:15 PM – 3:30 PM

L56 Ketamine in Driving Under the Influence of Drugs (DUID) Cases: 2015–2023
Amanda L. D’Orazio, MS*; Ayako Chan-Hosokawa, MS

3:30 PM – 3:45 PM

L57 DUID Cannabinoid Investigations: Blood, Oral Fluid, or Urine—Which Is the Superior Specimen?
Curt E. Harper, PhD*; Clarissa Lawen; Kristin Tidwell, BS; Gil Sapir, JD, MSc
TOXICOLOGY

3:45 PM – 4:00 PM  L58  The Detection of Cannabinoids in Exhaled Breath Condensate After Cannabis Use
Jennifer L. Berry, PhD*; Kavita M. Jeerage, PhD; Cheryle N. Beuning, PhD; Ashley Brooks-Russell, PhD; Tara Lovestead, PhD

4:00 PM – 4:15 PM  L59  Cocaine and Benzoylecgonine in Blood and Oral Fluid of DUID Cases (2018–2022)
Michael L. Weaver*; Clarissa Lawen; Christopher Bartle; Curt E. Harper, PhD

4:15 PM – 4:30 PM  L60  Mile High: A Five-Year Review of Fentanyl Trends in Colorado Impaired Driving Cases
Stephanie Olofson, BS, MS*

4:30 PM – 4:45 PM  L61  Impaired Driving Cases With Bromazolam
Nicholas B. Tiscione, MS*; Edward Zumaeta

Friday

General Forensic Toxicology

Moderator: Chris Heartsill  Co-Moderator: Aaron Shapiro, PhD

8:30 AM – 8:45 AM  L62  An Outlook on Fentanyl Adulteration: Polydrug Circumstances, Trends, and Tomorrow’s Forecast
Alex J. Krotulski, PhD*; Sara Walton, MS; Donna M. Papsun, MS; Joshua S. DeBord, PhD; Barry K. Logan, PhD

8:45 AM – 9:00 AM  L63  Controlled Oral Kratom Leaf Administration to Healthy Humans: Abuse Potential- and Withdrawal-Related Effects, Adverse Events, and Mitragynine and 7-Hydroxy-Mitragynine Plasma Pharmacokinetics
Marilyn A. Huestis, MS, PhD*; John Bothmer, PhD; Thomas Hudzik, MS, PhD; Jack E. Henningfield, BA, PhD; Ramsey Atallah, BA

9:00 AM – 9:15 AM  L64  The Extraction’s Always Greener on the Other Side
Madeleine E. Wood, MS*; Joshua Z. Seither, PhD; John J. Kristofic, BS; Erin Karschner, PhD; Jeffrey P. Walterscheid, PhD

9:15 AM – 9:30 AM  L65  Homoamphetamine: A Cautionary Tale
Laura Friederich, BS*; Sandra Bishop-Freeman, PhD

9:30 AM – 9:45 AM  L66  The Bath Salts State: A Comprehensive Review of Substituted Cathinones in Miami From 2011 to 2023
Elisa N. Shoff, MS*; Zaney E. Mary, BS; Diane Moore, PhD

9:45 AM – 10:00 AM  L67  The Search for the K-Hole: A Six-Year Study of Ketamine in Postmortem Cases From the Miami-Dade County Medical Examiner Department, 2018–2023
Jennifer Gonyea, BS*; Diane Moore, PhD

10:00 AM – 10:15 AM  L68  Segmented Workflows and the Confrontation Clause: Achieving Congruence Between Constitutional Guarantees, Laboratory Productivity, and Toxicological Expertise
M.J. Menendez, JD*; Barry K. Logan, PhD; Daniel T. Anderson, MS; Donna M. Papsun, MS

10:15 AM – 10:30 AM  BREAK

*Presenting Author
TOXICOLOGY

Alternative Matrices

Moderator: Marta Concheiro-Guisan, PhD
Co-Moderator: F. Wayne Lewallen, BS

10:30 AM – 10:45 AM L69 A Quantitative Analysis of Cannabis Exposure Biomarkers in Exhaled Breath Condensate and Oral Fluid
Meena Swaminathan, MSFS*; Anthony P. DeCaprio, PhD

10:45 AM – 11:00 AM L70 The Use of Hair Analysis as a Potential Predictor of Tolerance in Decedents With High Fentanyl Concentrations in Fentanyl-Related Deaths: Preliminary Results
Nicola Pigaiani, MD*; Marco Ballotari, PhD, MA; Brandi C. McCleskey, MD; Francesco Taus, PhD; Federica Bortolotti, MD, PhD; Rossella Gottardo, PhD; Gregory G. Davis, MD, MSPH; Karen S. Scott, PhD

11:00 AM – 11:15 AM L71 A Quantitative Assessment of Five Hair Drug Testing Laboratories With a Commercial Hair Reference Material
Edwin Dale Hart, BS*; Svante Vikingsson, PhD; Ruth E. Winecker, PhD; Eugene D. Hayes, PhD; Lisa S. Davis, MS; Ron Flegel, MS

11:15 PM – 11:30 AM L72 The Gonadotoxic Effects of Tobacco Smoking on Human Seminal Fluid
Nadeem-Ul-Hassan Khan*; Allah Rakha*; Rahat Abdul Rehman*; Shahid Nazir, PhD; Tahmina Rehman

11:30 AM – 11:45 AM L73 The Identification of the New Synthetic Opioid N-Piperidinyl Etonitazene (Etonitazepipne) in Postmortem Alternative Matrices
Erika Buratti, PhD*; Gianmario Mietti, PhD; Alice Cerioni, PhD; Marta Cippitelli, PhD; Rino Froldi, MSc; Mariano Cingolani, MD, MSc; Roberto Scendoni, PhD

11:45 AM – 1:00 PM BREAK

23rd Annual Postmortem Pediatric Forensic Toxicology Session

Moderator: Robert Middleburg, PhD
Co-Moderator: Nikolas P. Lemos, PhD

1:00 PM – 3:00 PM L74 Postmortem Pediatric Forensic Toxicology
Robert A. Middleberg, PhD*; Nikolas P. Lemos, PhD*; Katherine Kenerson, MD*; Andrew Baker, MD*; Sterling J. McLaren, MD*; Diane Moore, PhD*; Zaney E. Mary, BS*
LAST WORD SOCIETY

Thursday

Moderator: Kenneth Melson, JD
Co-Moderator: Carla Noziglia, MS

8:00 PM – 8:20 PM  LW1  A Forensic Analysis of the 1960 Rome Olympics’ 100-Meter Dash Final
John David Bullock, MD, MPH*; Gerald H. Ashworth, MBA; David Guyton, MD

8:20 PM – 8:40 PM  LW2  The Strange Deaths of American Presidents
Lawrence Quarino, PhD*

8:40 PM – 9:00 PM  LW3  (De)coronation Jewels: The “Affair of the Diamond Necklace” Between Historical and Forensic Implications
Matteo Borrini, PhD, MS*

9:00 PM – 9:20 PM  LW4  Man vs. “Gator” – The Forensic Story • The “Media” Story
Walter F. Zoller, DMD*

9:20 PM – 9:40 PM  LW5  The First Full-Service Criminalistics Laboratory: Scientific Detection Laboratory, Chicago, IL
Peter Striupaitis, MS*

9:40 PM – 10:00 PM  LW6  Will Hatred Never Die? The Murder of Bishop William Alexander Guerry
J.C.U. Downs, MD*

10:00 PM – 10:20 PM  LW7  The Unknown Child on the Titanic: Identified! Identified?
Colleen M. Fitzpatrick, PhD*

*Presenting Author
YFSF POSTER SESSION

Wednesday

Digital & Multimedia Sciences

11:30 AM – 1:00 PM   Y1   The Forensic Acquisition and Inspection of Aftermarket Vehicle Infotainment Systems
                        Jett Brandes, MD*; Andrew Clark; Robert Boggs, APS

11:30 AM – 1:00 PM   Y2   The Impact of Zoom on Smart Phone Camera Identification
                        Gavin Norton*; Stephanie Reinders, PhD

11:30 AM – 1:00 PM   Y3   Known Hash Filtering: An Efficient Way to Eliminate Irrelevant Files and Show Files of Interest in Digital Examinations
                        Jessica A. Smith, BS*; Lyndsay Haak, MS; Timothy G. Suggs, BS; James Trevillian, BS; Josh Brunty, ScD

11:30 AM – 1:00 PM   Y4   Producing Datasets: Capturing Images on Multi-Camera Smart Phones for Source Camera Identification
                        Megan McGuire*; Stephanie Reinders, PhD

Toxicology

11:30 AM – 1:00 PM   Y5   The Quantification of Alcohols and Acetaldehyde in Hand Sanitizers Using Headspace/Gas Chromatography/Mass Spectrometry
                        Chessa To, BS*; Jacob A. Theruvathu

11:30 AM – 1:00 PM   Y6   The Development and Validation of a Biotage® Extrahera™ Automated Extraction Method of Opioids and Their Metabolites in Human Urine Using LC/MS/MS
                        Jessica M. Braeunle, BS*; Marianne Staretz, PhD; Nadine M. Koenig; Dean Fritch, PhD; Thomas A. Brettell, MS, PhD

11:30 AM – 1:00 PM   Y7   The Death of an Accused Person in a Court After the Announcement of the Verdict
                        Massinissa Benyagoub*; Mohamed Oualid; Djamil Azzouz; Redouane Benazzouz

11:30 AM – 1:00 PM   Y8   The Use of Novel Psychoactive Substances (NPS) in Italy: A Comprehensive Meta-Analysis
                        Muhammad Usman, PhD, MS*; Donatella Nardiello; Christian Pallante; Donatella Curtotti; Maurizio Quinto

11:30 AM – 1:00 PM   Y9   Monitoring the New England Drug Supply Through Novel Drug Checking Methods
                        Max T. Denn, MS*; Joshua S. DeBord, PhD; Alexis D. Quinter, MS; Barry K. Logan, PhD; Alex J. Krotulski, PhD

11:30 AM – 1:00 PM   Y10  An Evaluation of Postmortem Redistribution of Δ9-Tetrahydrocannabinol (THC) and 11-Nor-9-Carboxy-THC (THC-COOH)
                        Isabelle Chevrier, BSc*; Betty Chow, MSc; Brent Cahill, MSc; James Watterson, PhD

11:30 AM – 1:00 PM   Y11  Chemiluminescent Detection Limitations of Cannabinoids in Edibles and Urine Samples
                        Cristina Elisabeth Lemus*

11:30 AM – 1:00 PM   Y12  Method Development for a Quantitative Panel of Psychoactive Adulterants in Biological Matrices using LC/MS/MS
                        Shayna R. Kasher, BS*
### YFSF POSTER SESSION

#### Thursday

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<thead>
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<th>Time</th>
<th>Poster</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y13</td>
<td>Body Fluid Identification From Mixed Samples and Male DNA Confirmation Utilizing SERATEC® PSA and PMB Tests</td>
<td>Scarlet Tabitha Neilson, BS*; Lindsay Loughner Kotchey, MS; Mirna Ghemrawi, PhD, MSFS; M. Gabriela Roca, MSc, PhD; Leah Nangersoni, BS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y14</td>
<td>Exploring the Performance of an Initial Set of DIP-STR Markers for Biogeographic Ancestry Prediction in United States Populations</td>
<td>Lauren Hoopes, BS*; Diana Hall, MA; Fabio Oldoni, MS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y15</td>
<td>An Internal Validation of the Janovsky Color Test and Testing the Platinum Chloride Microcrystalline Method for Benzodiazepines</td>
<td>Allison M. Swigart, BS*; Lauren L. Richards-Waugh, PhD; Kathleen Schell; Rebecca Barlag, PhD, MS; Lyndsay B. Cone, MS, BS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y16</td>
<td>The Use of Leaf Spray PSI-MS for the Detection of Kratom (Mitragyna Speciosa) Leaf</td>
<td>Macenzie Hope Powell, MS, BA*; Michael Van Stipdonk, BA, PhD; Stephanie J. Wetzel, PhD; Theodore A. Corcovilos, PhD; Hannah Zimmerman-Federle, MS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y17</td>
<td>The Effects of Fingerprint Development Techniques on Forensic Cartridge Case Identification</td>
<td>Sasha L. Valentino, BA*; Lyndsie N. Ferrara, PhD; Missy Meredith; Sarah Varhola, MS; Stephanie J. Wetzel, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y18</td>
<td>The Impact of Age on Strength and Fracture Patterns of the Human Hyoid Bone</td>
<td>Olivia DePergola, BA*; Pamela Marshall, PhD; John A. Viator, PhD; Suvendra Vijayan, BDS, MS; Jennifer L. Hammers, DO</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y19</td>
<td>Surveillance Efforts to Track Drug Market Changes in Philadelphia, Pennsylvania</td>
<td>Alexis D. Quinter, MS*; Joshua S. DeBord, PhD; Max T. Denn, MS; Barry K. Logan, PhD; Alex J. Krotulski, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y20</td>
<td>The Detection of Low Concentration Ignitable Liquid Residues From Fire Debris Using Gas Chromatography/Mass Spectrometry and an Ignitable Liquid Detection Canine</td>
<td>Abigail V. Burke, BA*; Nancy A. Love, BS; Matthew Regentin, MS; Stephanie J. Wetzel, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y21</td>
<td>An Analysis of Drug Content Distribution on Paper Using Both Soak and Spray Methods by Gas Chromatography/Mass Spectrometry (GC/MS)</td>
<td>Aizlynn M. Michel, BA*; Hannah J. Spitzer, MS; Ashley N. Ebert, PhD, BS; Stephanie J. Wetzel, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y22</td>
<td>Examining the Effects of Thermal Stress on the Structure and Downstream DNA Analysis of Human Teeth</td>
<td>Michael Allie Brivchik, BA*; Pamela Marshall, PhD; Jennifer L. Hammers, DO; Rhonda K.K. Roby, PhD, MPH; Lisa R. Ludvico, PhD; Angie Ambers, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y23</td>
<td>An Analysis of the Transfer of Drugs to the Envelope in Mail Over Time and Varying Conditions</td>
<td>Madison Ann Eidemueller, BS*; Erica Maney, MSc; Christopher Merrill, BA, MS; Stephanie J. Wetzel, PhD</td>
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*Presenting Author*
YFSF POSTER SESSION

11:30 AM – 1:00 PM  **Y24** Investigation and Detection Methods for Digital and Penile Penetration With No Ejaculation
*Brianna Gregory, BS*; Janine M. Kishbaugh, MS; Lawrence Quarino, PhD; Amrita Lal-Paterson

11:30 AM – 1:00 PM  **Y25** Identifying the Presence of Semen Through the Detection of Fructose
*Taylor M. McClure, BS*; Emily Chadwick, MS; Pamela Marshall, PhD; Michael I. Jensen-Seaman, PhD

11:30 AM – 1:00 PM  **Y26** Addressing Sexual Assault in Pakistan: Insights From an Analysis of Female Survivors at Lahore General Hospital
*Muhammad Ahmad Faraz, MBBS*

*Zaire Elijah Fabian, BS*

11:30 AM – 1:00 PM  **Y28** The Recovery of Human DNA in an Aqueous Environment Using Novel Technology
*Halle E. Saf, BS*; Pamela Marshall, PhD; Lisa R. Ludvico, PhD; Samantha Border

11:30 AM – 1:00 PM  **Y29** The Optimization of DNA Extraction Methods From Alternative Reference Materials
*Sophie S. Lee, BS*; Leah Nangroni, BS; Lindsay Loughner Kotchey, MS; Mirna Ghemrawi, PhD, MSFS

11:30 AM – 1:00 PM  **Y30** Assessing the Impact Dynamics of Less Lethal Bean Bag Ammunition
*Brook Fontaine*

11:30 AM – 1:00 PM  **Y31** A Comprehensive Examination of STR and Y-STR Profiling in Samples With Limited or Negligible DNA Quantities
*Chih-Wen Su*

11:30 AM – 1:00 PM  **Y32** A Landscape Study: Investigating Potential Links Between Adoption and Serial Killers
*Amanda F. Piccirilli, BA*; Pamela Marshall, PhD; Lyndsie N. Ferrara, PhD; Colleen M. Fitzpatrick, PhD

11:30 AM – 1:00 PM  **Y33** The Recovery of Nuclear DNA From Skeletal Remains Decomposed in Freshwater
*Zoe L. Sikon, BS*; Ashley G. Morgan, PhD

**Forensic Nursing Science**

11:30 AM – 1:00 PM  **Y34** Examining the Presence of Foreign DNA on Neck Swabs
*Alexa M. Gonzalez Morales*; Lyndsie N. Ferrara, PhD; Lisa R. Ludvico, PhD

**Odontology**

11:30 AM – 1:00 PM  **Y35** Allied Dental Professionals’ Identification Accuracy of Burned Teeth
*Brenda Tallon Bradshaw, BSDH, MS*; Marsha A. Voelker, MD; Samantha Vest, MS; Sinjini Sikdar, PhD

*Presenting Author*
YFSF POSTER SESSION

Psychiatry & Behavioral Science

11:30 AM – 1:00 PM  Y36  Pursuit of Justice: Mapping the Future Landscape of Forensic Psychiatry
   Bellanirys Acosta Arias, MD*; Alexandra T. Luna, BS; Kishan Shah, MD

11:30 AM – 1:00 PM  Y37  The Makings of a High-Profile Case: How Media Bias Impacts Forensic Investigations in Missing Person Cases
   Jennifer Fertel, BA*; Pamela Marshall, PhD; Lyndsie N. Ferrara, PhD; Charlene E. Shunick, MS

11:30 AM – 1:00 PM  Y38  Using an Indirect Personality Assessment to Determine the Psychopathy of Timothy McVeigh
   Mackenzie Miller*; John Cencich; Lyndsie N. Ferrara, PhD; Pamela Marshall, PhD

11:30 AM – 1:00 PM  Y39  Traumatic Brain Injury and Criminal Behavior
   Bellanirys Acosta Arias, MD*

11:30 AM – 1:00 PM  Y40  Determining the Viability of Breathwork and Meditation as Intervention Techniques for Stress in the Forensic Science Community
   Prateek Shetty, BS*; Keisha Jones

Questioned Documents

11:30 AM – 1:00 PM  Y41  The Extraction and Subsequent Analysis of Gel Pen Ink
   Elizabeth M. Knittle, BA*; Stephanie J. Wetzel, PhD; Lyndsie N. Ferrara, PhD; Sean M. Fischer, PhD

Friday

Anthropology

11:30 AM – 1:00 PM  Y42  The Ethical Considerations of Teaching Skeletons in West Virginia
   Kristy Henson, MS*; Jay Bow

11:30 AM – 1:00 PM  Y43  Restoring Demographic Information of Antique Teaching Skeletons at Fairmont State University
   Jay Bow*; Kristy Henson, MS

11:30 AM – 1:00 PM  Y44  Injury Recidivism as Embodied Evidence of Structural Violence: A Trauma Analysis Examining Fracture Location, Severity, and Occurrence in a New Mexico Forensic CT Sample
   Emily Romdenne, BS*; Allysha P. Winburn, PhD

11:30 AM – 1:00 PM  Y45  An Evaluation of Calcium Removal During Demineralization of Bone for Stable Isotope Analysis of Collagen: A Determination of Optimal Treatment Time
   Julianne J. Sarancha, MS*

11:30 AM – 1:00 PM  Y46  Evaluating the Effectiveness of Quantitative Skeletal Age Estimation Methods Compared to Traditional Qualitative Methods
   Ruizhuo Zhang*; Krista E. Bennett, MA

11:30 AM – 1:00 PM  Y47  “Known Only to God”: Rediscovering a Historic Freed Slave Cemetery Through the Use of Fluxgate Gradiometry and Its Application to Forensic Science
   Hannah E. Matulek, MS, BA*; Savannah Sass, MS*

*Presenting Author
# YFSF Poster Session

## Engineering & Applied Sciences

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<th>Time</th>
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y48</td>
<td>A Digital Microfluidic Approach to Processing Forensic Samples</td>
<td>Leticia Bodo, MSc; Mohamed Elsayed, MSc; Jonathan S. Millman, BSc, PhD; Aaron Wheeler, PhD</td>
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## General

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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y49</td>
<td>A Call for Community: Working Toward Humanitarian Solutions to Address Inadequate</td>
<td>Steff King, MA; Gail S. Anderson, PhD</td>
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<td>Indigenous Death Investigations in North America</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y50</td>
<td>A Probabilistic Genotyping Analysis of Trace DNA and Transfer Evidence</td>
<td>Charis Ann Hickey, BS; Kelly J. Beatty, MSFS; Amy K. Smith, MS; Eric Miller, MS</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y51</td>
<td>A Semi-Automatic Tool for Footwear Impression Alignment</td>
<td>Hana Lee, BS; Alicia Laura Carriquiry, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y52</td>
<td>An Interdisciplinary Approach for the Identification of Antique Skeletal Teaching Specimens:</td>
<td>Cynthia Nichols</td>
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<td>DNA Extraction, Forensic Bone Standards, and X-Ray Analysis</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y53</td>
<td>Trend Identification in X-Ray Diffraction Peaks of Historic Cartridge Cases From Fort Ord,</td>
<td>Sarina Regis; Katelyn K. Huie; Madison R. Loewen; McKenzie Floyd, MS</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y54</td>
<td>A Qualitative Analysis of Xylazine, Nitazenes, and Common Opioids/Analogs by Liquid Chromatography/Tandem Mass Spectroscopy (LC/MS/MS) Following Collection With the M-Vac® Wet-Vacuum System</td>
<td>Madeline I. L. Robinson, BS; Lauren L. Richards-Waugh, PhD; Catherine Rushton, MSFS, EdD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>Y55</td>
<td>Can the Use of Sharpies® in Forensic Analysis Be a Source of DNA Transfer and</td>
<td>Haley Elizabeth Murphy, BS; Pamela Marshall, PhD</td>
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<td>Contamination When Examining Difference Fabric Types?</td>
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## Pathology/Biology

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<thead>
<tr>
<th>Time</th>
<th>Poster</th>
<th>Title</th>
<th>Authors</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y56</td>
<td>The Validation of a Manual Selective Degradation Method of Differential Extraction</td>
<td>Katelyn Peyton, MS; Kelly J. Beatty, MSFS; Amy K. Smith, MS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y57</td>
<td>Getting Down and Dirty: Analyzing Changes in Soil Microbiota During Three Stages of Mouse Decomposition</td>
<td>Madeline Robinson; Emily Nowicki, PhD, BS; Samantha J. Sawyer, PhD, BS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y58</td>
<td>A Commotio Cordis Case After a Fall From Height</td>
<td>Hakan Isik; Ilkay Kalkanli; Gözde Şirin; Ahmet Depreli, MD; Selçuk Çetin</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>Y59</td>
<td>Comparing 3D Photogrammetry Models Created Using Either Routinely Acquired Authopsy Photographs or Those Taken Specifically for Photogrammetry</td>
<td>Malgorzata Pietrzak; Anja Petaros; Anders Persson, MD, PhD</td>
</tr>
</tbody>
</table>
YFSF POSTER SESSION

11:30 AM – 1:00 PM  Y60  Fun Run the Bowel: Two Cases of Fatal Gastrointestinal Hemorrhage From Duodenal Ulcers
Jessicia Schmitt, MD*; Neil G. Haycocks, MD, PhD

11:30 AM – 1:00 PM  Y61  Impacts of Desiccants on DNA Quantity and Quality in Sexual Assault Kits Over a One-Year Period
Catherine F. Hull, BA*; Randy Nagy, BS; Dana Voris, MS; Lisa R. Ludvico, PhD;
Pamela Marshall, MFS

11:30 AM – 1:00 PM  Y62  The Identification of Biomarkers Associated With Prolonged Starvation in Cat (Felis Catus) Bones
Annagrace J. Radocaj, BS*; Lisa R. Ludvico, PhD; Becky Morrow, DVM, MS

11:30 AM – 1:00 PM  Y63  A Low-Cost Microfluidic Biochip Integrated With LAMP for the Rapid Detection of Streptococcus Pneumoniae to Aid in Forensic Pathology
Angel Gabriel Gutierrez Ruiz*

11:30 AM – 1:00 PM  Y64  An Autopsy Case of an Unusual Association Between the Chiari Network and the Patent Foramen Ovale: An Anatomical Variation or a Risk Factor? A Case Report
Hind Abouzahir, MD, PhD*
In order to keep BYOS.ppt informal, fun, and informative for the large and diverse audience, here are a few things to keep in mind for the BYOS.ppt program at the 2024 AAFS Annual Conference in Denver, CO:

- Presentations must be in PowerPoint® format.
- Proposals must be submitted on this form accompanied by a “6-slides-per-page” printout of the presentation and an electronic copy on flash drive.
- BYOS is not intended as a forum to present scientific papers. It is designed as a means to present interesting information and/or unusual case(s) that may be educational and blended with humor.
- Speakers should plan on 10 minutes in which to present their material.
- Material being presented in other parts of the AAFS scientific program will not be accepted at BYOS.ppt.
- Tables, charts, and graphs should be avoided, making every effort to use slides of scenes, bodily findings, and evidence.

This completed form, a “6-slides-per-page” printout, and the electronic presentation copy should be delivered to the on-site AAFS Registration Desk by 4:00 p.m. on Wednesday, February 20, 2024. Presentations will be selected and scheduled based on perceived interest to the audience and in the order in which the completed submissions are received. This form and required printout are needed to organize the BYOS.ppt program and to allow appropriate allocation of continuing education credit.

BYOS PROGRAM FORM

Name and Degree(s): ____________________________________________________________

Job Title: ___________________________________________________________________

Place of Employment: __________________________________________________________

AAFS Section Affiliation (if none, write “none”): __________________________________

The presentation is being offered primarily to:

☑ Solicit input/advice on a challenging case
☑ Present interesting information or case(s) for education purposes
☑ Entertainment

Presentation is:

☑ A single case
☑ A series of cases with a common topic
☑ Multiple cases with unrelated topics
☑ Other (please specify): ______________________________________________________

Briefly describe the material to be presented: ______________________________________

What are the major points to be emphasized?: ______________________________________

How will the attendees benefit from this presentation?: ______________________________

Is there commercial interest in the material being discussed?*: ☐ No ☐ Yes (if yes, please describe): ________________________________________________

How much presentation time is required?: __________ minutes How many PowerPoint® slides will be shown?: __________

Presenter’s local hotel: ____________________________________________________________

Room #: __________ Phone #: ___________________________

Cell Phone: ______________________________ Email you can access while at the meeting: ____________________________________________________________

The BYOS agenda, scheduled presentation times, and continuing education credit hours will be posted near the BYOS meeting room.

**************************************************************************

AAFS STAFF USE ONLY: Date Received: ____________ Time: _______________