



# PROGRAM



**February 19-24, 2024**

Denver, Colorado

Colorado Convention Center

**#AAFS2024**





**JFS**  
JOURNAL OF  
FORENSIC SCIENCES



**ASB**  
ACADEMY  
STANDARDS BOARD



EST. 1956

**The official peer-reviewed publication of the AAFS and globally acclaimed forensic science journal.**



EST. 2015

**The standards-developing body of the AAFS accredited by the American National Institute of Standards (ANSI).**

## GET TO KNOW THE AMERICAN ACADEMY OF FORENSIC SCIENCES



**FSF**  
FORENSIC SCIENCES  
FOUNDATION



**FEPAC**  
FORENSIC SCIENCE EDUCATION PROGRAMS  
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**The educational, scientific, and research arm of the AAFS, funding over \$150,000 yearly in grants, scholarships, and awards.**



EST. 1969

**The formal University program-accreditation committee of the AAFS providing national standards for education in forensic science.**



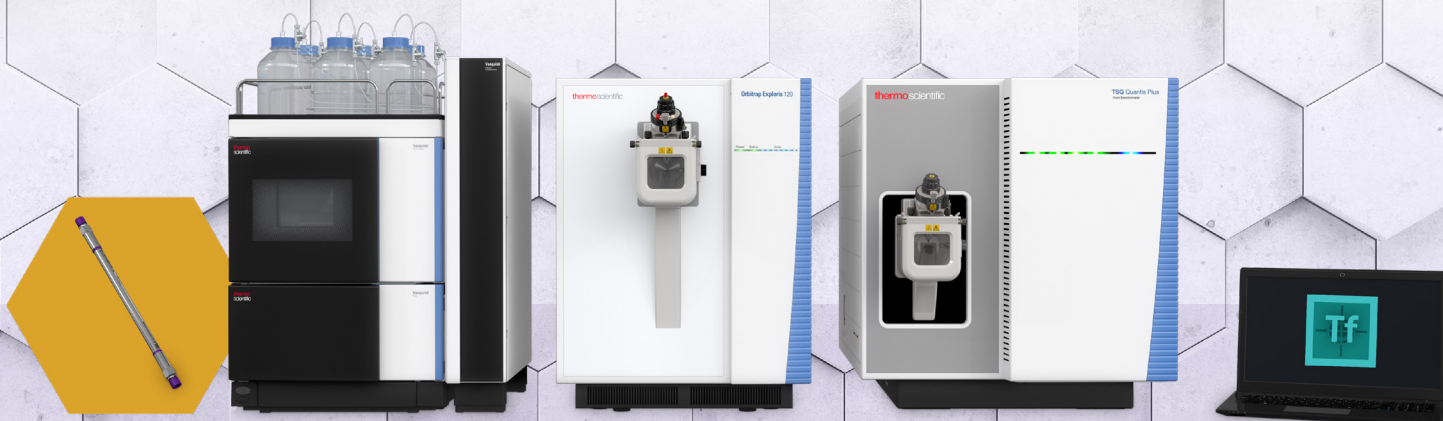
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INTERNATIONAL SYMPOSIUM  
ON HUMAN IDENTIFICATION

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SAN ANTONIO, TX | SEPTEMBER 23–26, 2024

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# OFFICERS AND OFFICIALS

## Officers

*President:* C. Ken Williams, MS, JD  
*President-Elect:* Christopher Thompson, MD  
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*Treasurer:* James Caruso, MD  
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*Forensic Nursing Science:* Jamie Ferrell, MBA  
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*Psychiatry & Behavioral Science:* Dean De Crisce, MD  
*Questioned Documents:* Linton Mohammed, PhD  
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### Anthropology

*Chair:* Krista Latham, PhD  
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*Chair:* Peter Diaczuk, PhD  
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*Chair:* Carole Chaski, PhD  
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### Questioned Documents

*Chair:* James Green, BS  
*Secretary:* Kevin Kulbacki, MSFS

### Toxicology

*Chair:* Amanda Mohr, MSFS  
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## 2024 Program Committee

*Program Chair:* Matthew Wood, PhD  
*Program Co-Chair:* Karen Rosenbaum, MD  
*Plenary Session:* Vincent Desiderio, Jr., MS  
 Dean De Crisce, MD  
*Justice Talks Sessions:* Virginia Barron, JD  
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*Poster Sessions:* Marla Carroll, BS  
 Melissa Connor, PhD  
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*Luncheon Seminars:* Emily Gottfried, PhD  
 Carole Chaski, PhD  
*Last Word Society:* Kenneth Melson, JD  
 Carla Noziglia, MS  
*Bring Your Own Slides:* J.C.U. Downs, MD  
 Joseph Prahlow, MD  
*Student Academy:* Lynn Schneeweis, MS  
 Ginesse Listi, PhD  
*Interdisciplinary Symposium:* Jessica Volz, DNP  
 Adam Freeman, DDS  
*Local Arrangements:* Michala Stock, PhD

*Anthropology:* Teresa Wilson, PhD  
 Jaymelee Kim, PhD  
*Criminalistics:* Agnes Winokur, MS  
 Lynn Schneeweis, MS  
*Digital & Multimedia Sciences:* Josh Brunty, ScD  
 Christina Malone, MSFS  
*Engineering & Applied Sciences:* Kurt Weiss, MS  
*Forensic Nursing Science:* Kelly Berishaj, DNP  
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 Brian Clark, MFS  
*Jurisprudence:* Leigh Tomlin, JD  
 Colin Bellair, JD  
*Odontology:* Phyllis Ho, DDS  
*Pathology/Biology:* Lavinia Iancu, PhD  
*Psychiatry & Behavioral Science:* Corina Freitas, MD  
 George Annas, MD, MPH  
*Questioned Documents:* Gina Hunter, BS  
 Brenda Lanners, BS  
*Toxicology:* Dayong Lee, PhD  
 Erin Karschner, PhD

# GENERAL INFORMATION

## Registration Desk Hours

|           |             |         |   |         |
|-----------|-------------|---------|---|---------|
| Sunday    | February 18 | 1:00 PM | - | 5:00 PM |
| Monday    | February 19 | 6:45 AM | - | 5:00 PM |
| Tuesday   | February 20 | 6:45 AM | - | 6:00 PM |
| Wednesday | February 21 | 6:45 AM | - | 5:00 PM |
| Thursday  | February 22 | 6:45 AM | - | 5:00 PM |
| Friday    | February 23 | 6:45 AM | - | 4:00 PM |

## Exhibit Hall Hours

|                |                 |          |   |          |
|----------------|-----------------|----------|---|----------|
| Wednesday      | February 21     | 11:30 AM | - | 4:00 PM  |
| Thursday       | February 22     | 9:00 AM  | - | 2:00 PM  |
| AAFS Reception | (Exhibits Open) | 6:00 PM  | - | 8:00 PM  |
| Friday         | February 23     | 8:00 AM  | - | 12:00 PM |

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](mailto: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 inappropriate comments and behavior or other disruptions during a presentation will not be tolerated and may result in being removed from the session.

## Future AAFS Annual Conferences

### 2025 AAFS Annual Conference

February 17-22, 2025  
Baltimore Convention Center  
Baltimore, MD

### 2026 AAFS Annual Conference

February 9-14, 2026  
Ernest N. Morial Convention Center  
New Orleans, LA

### 2027 AAFS Annual Conference

February 15-20, 2027  
Rosen Shingle Creek Convention Center  
Orlando, FL

# SEXUAL MISCONDUCT RESOURCES AND INFORMATION

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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-KBhByEiwADBYWCqz0g1E4mRJrXf5TN-EQ-JYXo2Q7USO-Yrtu1c9klaUmTmrEtpmsaxoCbiQQAvD\\_BwE](https://www.rainn.org/articles/sexual-harassment?gclid=CjwKCAjw2P-KBhByEiwADBYWCqz0g1E4mRJrXf5TN-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

RAINN  
<https://www.rainn.org/>  
Resources include definitions, statistics, crisis line, and crisis chat.

National Sexual Violence Resource Center  
<https://www.nsvrc.org/>  
Resources for survivors, including definitions, where to get help, and post-assault recovery.

National Domestic Violence Hotline  
<https://www.thehotline.org/>  
Resources include definitions, local resources/legal aid, crisis line, and crisis chat.

*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



## SUNDAY – FEBRUARY 18 | 7:00 PM

### Film Screening – Just Mercy

Join AAFS for a special screening of *Just Mercy*, the powerful and thought-provoking 2019 biopic illustrating the true story of 2024 Keynote Speaker and renowned lawyer Bryan Stevenson and his history-making battle for justice for a wrongly condemned death row prisoner.

Cost: Free



## 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, and 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 L. Hassett, BS*

### Young Forensic Scientists Forum Founder's Award

*Zain M. Bhaloo, MSc*

# SECTION AWARDS

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

## Section Award Honorees

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### **Anthropology Section's**

J. Lawrence Angel Award  
T. Dale Stewart Award  
Ellis R. Kerley Research Award  
Outstanding Mentorship Award

Amber M. Plemons, PhD  
Eugénia Cunha, PhD  
Mary Elizabeth Cole, PhD  
Nicholas P. Hermann, PhD

### **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

Carole E. Chaski, PhD

### **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

### **Odontology Section's**

Reidar F. Sognaes Award

Gary M. Berman, DDS

### **Pathology/Biology Section's**

Milton Helpert 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  
Annual Lectureship in Toxicology

Joseph J. Saady, PhD  
Munchelou M. Gomoni, BS  
Rebecca Smith, MS  
Brandon Jeffrey, MS

# BUSINESS MEETINGS

---

## Attend Your Section's Annual Business Meeting!

| Wednesday, February 21 |   |                                         |
|------------------------|---|-----------------------------------------|
| 1:00 PM                | - | 3:45 PM Criminalistics                  |
| 1:30 PM                | - | 3:45 PM Anthropology                    |
| 1:30 PM                | - | 3:45 PM General                         |
| 1:30 PM                | - | 3:45 PM Pathology/Biology               |
| 2:00 PM                | - | 3:45 PM Digital & Multimedia Sciences   |
| 2:00 PM                | - | 3:45 PM Engineering & Applied Sciences  |
| 2:00 PM                | - | 3:45 PM Forensic Nursing Science        |
| 2:00 PM                | - | 3:45 PM Jurisprudence                   |
| 2:00 PM                | - | 3:45 PM Odontology                      |
| 2:00 PM                | - | 3:45 PM Psychiatry & Behavioral Science |
| 2:00 PM                | - | 3:45 PM Questioned Documents            |
| 2:00 PM                | - | 3:45 PM Toxicology                      |

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

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## AAFS Annual Business Meeting

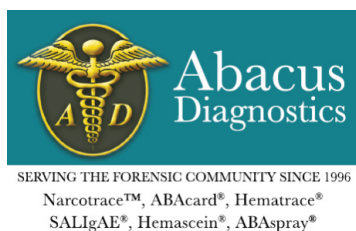
The AAFS Annual Business Meeting will be held on Wednesday, February 21, at 4:15 PM. It is essential that all Fellows and Members attend this very important meeting in order to reach a quorum for the voting process. Agenda items include the election of 2024-25 Officers, consideration of bylaw amendments,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

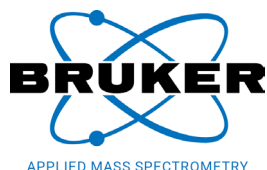
# FINANCIAL CONTRIBUTORS

The American Academy of Forensic Sciences would like to thank the following for  
their contribution to the 76<sup>th</sup> Annual Scientific Conference:

## GOLD SPONSOR



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# CONTINUING EDUCATION

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## General Information

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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

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- 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

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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

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## Guidelines For Claiming Credit

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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

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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

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

## Dental Continuing Education Credit

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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](http://www.ada.org/cerp).

## Legal Continuing Education Credit

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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

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A general non physician certificate of attendance will be available.

## General Continuing Education Credit

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General continuing education credit is offered for those practicing the various forensic science disciplines not represented in the aforementioned list.

## Nursing Continuing Education Credit

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The Postgraduate Institute for Medicine designates this live activity for a maximum 44.75 Continuing Nursing Education (CNE) credits. Nurses should claim only the credit commensurate with the extent of their participation in the activity.

# DIVERSITY AND INCLUSION IN FORENSIC SCIENCE FORUM AND RECEPTION

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*Open to All Meeting Registrants*

Tuesday, February 20, 2024

8:00 PM - 10:00 PM

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***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.

***Reception sponsored by:***



## MENTORSHIP PROGRAM BREAKFAST

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***Pre-Registration Encouraged***

Wednesday, February 21, 2024

7:00 AM – 8:15 AM

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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](mailto:mentorship@aafs.org).

# STUDENT ACADEMY

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*Pre-Registration Required (\$25/Person)*

**Tuesday, February 20, 2024**

**9:00 AM - 2:00 PM**

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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

*Odontology:*

**Lillian A. Nawrocki, DDS**

Orlando, FL

*Criminalistics:*

**Kelly Knight, MS**

George Mason University  
Fairfax, VA

*Pathology/Biology:*

**J.C.U. Downs, MD**

forensiX, LLC  
Savannah, GA

*Digital & Multimedia Sciences*

**Douglas Lacey, MS**

BEK TEK LLC  
Stafford, VA

*Psychiatry & Behavioral Science:*

**Emily D. Gottfried, PhD**

Medical University of South Carolina  
Charleston, SC

*Engineering & Applied Sciences:*

**Roy Crawford, BSME**

R.R. Crawford Engineering, Inc.  
Whitesburg, KY

*Questioned Documents:*

**Cami Fuglsby, BS**

South Dakota State University  
Brookings, SD

*Forensic Nursing Science*

**Amy Y. Carney, PhD**

San Marcos, CA

*Toxicology:*

**George F. Jackson, PhD**

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

*General:*

**Natalie M. Borgan, MS**

FBI  
Flat Rock, MI

**Ashraf Mozayani, PhD**

Texas Southern University  
Houston, TX

*Jurisprudence:*

**M.J. Menendez, JD**

Center for Forensic Science Research & Education  
Willow Grove, PA

# STUDENT ACADEMY

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## Program:

|                   |                                                      |
|-------------------|------------------------------------------------------|
| 9:00 AM - 9:10 AM | <b>Introduction</b><br><i>Lynn A. Schneeweis, MS</i> |
| 9:10 AM - 9:20 AM | <b>Welcome</b><br><i>Christopher Thompson, MD</i>    |
| 9:20 AM - 9:30 AM | <b>"The Case"</b><br><i>Ginesse A. Listi, PhD</i>    |

## The Forensic Sciences Group I Disciplines

|                     |                                                                          |
|---------------------|--------------------------------------------------------------------------|
| 9:30 AM - 10:45 AM  | <b>Pathology/Biology</b><br><i>J.C.U. Downs, MD</i>                      |
|                     | <b>Anthropology</b><br><i>Lauren R. Pharr Parks, PhD</i>                 |
|                     | <b>Odontology</b><br><i>Lillia A. Nawrocki, DDS</i>                      |
|                     | <b>Toxicology</b><br><i>George Jackson, PhD; Ashraf Mozayani, PhD</i>    |
|                     | <b>Digital &amp; Multimedia Sciences</b><br><i>Douglas Lacey, BS, MS</i> |
|                     | <b>Forensic Nursing Science</b><br><i>Amy Y. Carney, PhD</i>             |
| 10:45 AM - 11:00 AM | <b>Q&amp;A, Assignment, and Break</b>                                    |

## The Forensic Sciences Group II Disciplines

|                     |                                                                              |
|---------------------|------------------------------------------------------------------------------|
| 11:00 AM - 12:15 PM | <b>General</b><br><i>Natalie M. Borgan, MS</i>                               |
|                     | <b>Criminalistics</b><br><i>Kelly Knight, MS</i>                             |
|                     | <b>Questioned Documents</b><br><i>Cami Fuglsby, BS</i>                       |
|                     | <b>Engineering &amp; Applied Sciences</b><br><i>Roy Crawford, BSME</i>       |
|                     | <b>Psychiatry &amp; Behavioral Science</b><br><i>Emily D. Gottfried, PhD</i> |
| 12:15 PM - 1:30 PM  | <b>Lunch and Student Trivia</b>                                              |
| 1:30 PM - 1:45 PM   | <b>Case Conclusion</b><br><i>M.J. Menendez, JD</i>                           |
| 1:45 PM - 2:00 PM   | <b>Wrap-Up</b>                                                               |

# FEPAC SESSION

## 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

*Chair:*

**Heidi Eldridge, PhD**

The George Washington University  
Washington, DC

*Commissioner:*

**Josh Brunty, ScD**

Marshall University  
Huntington, WV

*Commissioner:*

**Sarah Seashols Williams, PhD**

Virginia Commonwealth University  
Richmond, VA

*Commissioner:*

**Thomas Brettell, PhD**

Cedar Crest College  
Allentown, PA

*Commissioner:*

**A. Karl Larsen, PhD**

University of Illinois, Chicago  
Chicago, IL

*Commissioner:*

**Jason L. Schroeder, MS**

Harris County Institute of Forensic Science  
Houston, TX

**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:

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

# YOUNG FORENSIC SCIENTISTS FORUM

*Open to All Meeting Registrants—Pre-Registration Encouraged*

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

Tuesday, February 20, 2024

8:00 AM – 5:00 PM

CE Hours: 6.75

*YFSF Chair:*

**Emily Rue, PhD**

Chemist/Forensic Examiner

U.S. Army Criminal Investigation Division

Atlanta, GA

### Presenters:

**Joe Adserias Garriga, DDS, PhD**

Assistant Professor

Department of Applied Forensic Sciences

Mercyhurst University

Erie, PA

**Deirdre Amaro, MD**

Chief Medical Examiner

Boone/Callaway County Medical

Examiner's Office

Columbia, MO

**Jeremy Boone, MS**

Sr. Field Application Scientist-HID

Thermo Fisher Scientific

Moseley, VA

**Claire Cartozzo, PhD**

DNA Analyst

Worldwide Counter Threat Solutions

Louisa, VA

**Anna S. Duggar, PhD**

Director of Forensic Chemistry

Assistant Professor

Loyola University New Orleans

New Orleans, LA

**Davette Gadison, MA**

Doctoral Candidate

Tulane University

Bangkok, Krung Thep, THAILAND

**Beth S. Goodspeed, MS**

Forensic Scientist IV

MA State Police Crime Laboratory

Bellingham, MA

**Krystal R. Hans, PhD**

Assistant Professor

Purdue University

West Lafayette, IN

**Cheryl Hunter**

Membership Coordinator

AAFS

Colorado Springs, CO

**Alex J. Krotulski, PhD**

Associate Director

CFSRE

Abington, PA

**Katarzyna Michaud, MD**

Senior Lectures and Privat-Docent

University of Lausanne

University Hospital in Lausanne

Lausanne, Vaud, SWITZERLAND

**Marilyn Miller, EdD**

Emeritus Professor

Virginia Commonwealth University

Chesterfield, VA

**Michelle R. Peace, PhD**

Professor

Virginia Commonwealth University

Richmond, VA

**Dayla Rich, PhD**

Forensic Chemist II

Union County Sheriff's Office

Monroe, NC

**M. Gabriela Roca, PhD**

Scientific Affair Coordinator

SERATEC mbH,

Goettingen, Niedersachsen, GERMANY

**Christopher Thompson, MD**

AAFS President-Elect

Associate Clinical Professor of Psychiatry

David Geffen School of Medicine at UCLA

Los Angeles, CA

**Dirk M. Vastrick, BA**

Owner, Dirk Vastrick Presents

Spokane Valley, WA

**C. Ken Williams, MS, JD**

AAFS President

Assistant Chief Forensic Scientist

NJSP Office of Forensic Sciences

Hamilton, NJ

**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

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## 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:

|                     |                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 AM - 8:20 AM   | <b>Introduction to the YFSF</b><br><i>Emily Rue, PhD</i>                                                                                  |
| 8:20 AM - 8:40 AM   | <b>Membership in AAFS</b><br><i>Cheryl Hunter</i>                                                                                         |
| 8:40 AM - 9:00 AM   | <b>My Journey to Justice for All</b><br><i>C. Ken Williams, MS, JD</i>                                                                    |
| 9:00 AM - 9:20 AM   | <b>Careers in Forensic Psychiatry</b><br><i>Christopher Thompson, MD</i>                                                                  |
| 9:20 AM - 9:40 AM   | <b>Investigating Forensics: Making a Case for Forensic Entomology as a Career</b><br><i>Krystal R. Hans, PhD</i>                          |
| 9:40 AM - 10:00 AM  | <b>Forensic Pathology: In the Flesh</b><br><i>Deirdre Amaro, MD</i>                                                                       |
| 10:00 AM - 10:15 AM | <b>BREAK</b>                                                                                                                              |
| 10:15 AM - 10:35 AM | <b>Careers in Forensic Science Are Not All Created Equal—What Are the Options for a Young Scientist?</b><br><i>Alex J. Krotulski, PhD</i> |
| 10:35 AM - 10:55 AM | <b>Career Path of a Forensic Scientist: A Realistic Approach</b><br><i>Joe Adserias Garriga, DDS, PhD</i>                                 |
| 10:55 AM - 11:15 AM | <b>Is Artificial Intelligence (AI) the Answer to Getting Hired Faster (and Better)?</b><br><i>Dirk M. Vastrick, BA</i>                    |
| 11:15 AM - 11:55 AM | <b>Resume Review Workshop</b><br><i>Dirk M. Vastrick, BA</i>                                                                              |
| 11:55 AM - 1:00 PM  | <b>BREAK</b>                                                                                                                              |
| 1:00 PM - 1:20 PM   | <b>From Fungi to Crime Scenes: A Lot of Places to Go and Learn!</b><br><i>M. Gabriela Roca, PhD</i>                                       |
| 1:20 PM - 1:40 PM   | <b>Life of a Forensic Scientist</b><br><i>Beth S. Goodspeed, MS</i>                                                                       |
| 1:40 PM - 2:00 PM   | <b>The Unbeaten Path: Making Unconventional Career Choices</b><br><i>Anna S. Duggar, PhD</i>                                              |

# YOUNG FORENSIC SCIENTISTS FORUM

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## **S1      Oh, the Places You'll Go! Exploring the Paths to Justice for All**

### **Program cont.:**

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

# INTERDISCIPLINARY SYMPOSIUM

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*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

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*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 at Cardozo Law  
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 transparent utilization of knowledge grounded in proper forensic science principles in ensuring the preservation of fair and just judicial and humanitarian outcomes will be highlighted by presenters discussing forensic science policy and context-specific challenges impacting 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 transparent application of science grounded in proper forensic science principles 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.

# INTERDISCIPLINARY SYMPOSIUM

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

### Program:

|                   |                                                                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 2:40 PM | <b>The Sydney Declaration: The Essence of Forensic Science</b><br><i>Claude Roux, PhD; Keith Inman, MCrim; Michelle Miranda, PhD, Patrick Buzzini, PhD</i> |
| 2:40 PM – 3:00 PM | <b>Applying the Sydney Declaration to Forensic Science Policy</b><br><i>Sarah Chu, PhD</i>                                                                 |
| 3:00 PM – 4:00 PM | <b>Justice Delayed is Justice Denied</b><br><i>Antonel Olckers, PhD</i>                                                                                    |
| 4:00 PM – 4:15 PM | <b>BREAK</b>                                                                                                                                               |
| 4:15 PM – 5:00 PM | <b>International Panel Discussion: The Role, Ethical Considerations, and Application of the Forensic Sciences in the Justice System</b>                    |

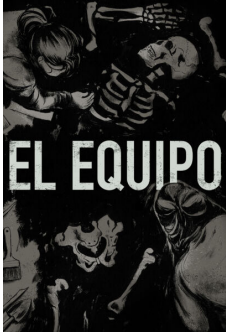
# HUMANITARIAN AND HUMAN RIGHTS RESOURCE CENTER

*Open to All Meeting Registrants*

## Special Documentary

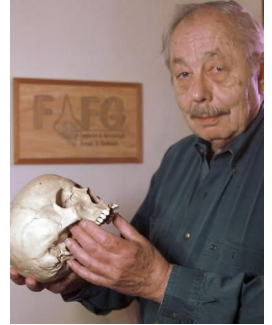
Tuesday, February 20, 2024

4:00 PM – 5:30 PM



The FSF and HHRRC are pleased to offer AAFS attendees a special viewing of *El Equipo*, a documentary focusing on legendary anthropologist and AAFS Fellow Dr. Clyde Snow and his work with Latin American forensic students investigating disappearances in Argentina during the “dirty war.”

**Film Description:** Legendary U.S. anthropologist Dr. Clyde Snow sets out to train a new group of Latin American students in the use of forensic anthropology. Their goal: to investigate disappearances in Argentina during the “dirty war.” The group expands its horizons, traveling to El Salvador, Bolivia, and Mexico, doggedly working behind the scenes to establish the facts for the families of the victims.



For more information about the documentary, go to:  
<https://www.pbs.org/independentlens/documentaries/el-equipo/>

## Poster Session

Tuesday, February 20, 2024

6:00 PM – 8:00 PM

The Humanitarian and Human Rights Resource Center (HHRRC) of the Forensic Sciences Foundation (FSF), with support from the National Institute of Justice's Forensic Technology Center of Excellence (FTCOE), provides needed resources and support to apply modern forensic science to global humanitarian and human rights projects. This Humanitarian and Human Rights Poster Session is an open meeting where attendees can learn about the application of forensic science to investigate humanitarian and human rights injustices. Information will be available at [www.forensicCOE.org](http://www.forensicCOE.org).

### Moderator:

**Dawnie W. Steadman, PhD**

HHRRC Chair

Director, Forensic Anthropology Center

University of Tennessee

Knoxville, TN

### Co-Moderator:

**Jeri D. Roper-Miller, PhD**

AAFS Past President (2021-2022)

FTCOE Project Director

RTI International

Research Triangle Park, NC

### Posters being presented:

1. **“They Are Our Parents” – Applications of Forensic Anthropology in Identifying Victims of Operation Condor in Paraguay**  
*Katelyn L. Bolhofner; Adriana Sartorio; Rogelio Goiburú*
2. **Hair and Natural Textiles as Detectors for Chlorine Gas Exposure**  
*Jack Hietpas; Ethan Groves; Skip Palenik; Christopher S. Palenik*
3. **Developing an Isoscape for Human Provenance: Pilot Study Results on the Effect of Formaldehyde on Strontium Isotope Values**  
*Lawrence Hill; Craig Adam Keyes; Stephen Fonseca; Lucinda Evert; Desiré Brits*
4. **Disaster Management for Migrant Death in Maverick County, Texas**  
*Molly A. Kaplan; Courtney Siegert; Ivanna Robledo; Chloe P. McDaneld; Victoria Soto; Kate Spradley*
5. **“We Will Never Stop Looking”: Utilizing Family Reference Samples Collected in Latin America to Identify Migrant Remains Found Along the United States/Mexico Border**  
*Jason De León; Perla Torres; Austin Shipman*
6. **Forensic Isotope Analysis in Colombia: Capacity-Building Through Research and Education**  
*Tiffany B. Saul; Natalia Angélica Camacho Torres*

# KEYNOTE ADDRESS

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*Open to All Meeting Registrants*

Wednesday, February 21, 2024

8:30 AM – 9:30 AM

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**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.

*Sponsored by:*



# PLENARY SESSION

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*Open to All Meeting Registrants*

Wednesday, February 21, 2024

10:00 AM – 11:30 AM

CE Hours: 1.5

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*Welcoming Remarks*



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

**C. Ken Williams, JD, MS**

**President**

**American Academy of Forensic Sciences**

**Cherry Hill, NJ**

*Plenary Session Chair:*

**Vincent J. Desiderio, Jr., MS**

U.S. Postal Inspection Service

Lovettsville, VA

*Plenary Session Co-Chair:*

**Dean De Crisce, MD**

Psychiatrist, Special Treatment Unit

Elizabeth, NJ

### ***Speakers***

**Hon. Bernice Donald, JD**

Federal Judge (retired)

Memphis, TN

**Tiffany Roy, JD, MSFS**

Forensic DNA Analyst

ForensicAid

West Palm Beach, FL

**Sarah Chu, PhD**

Director of Policy and Reform

Perlmutter Center for Legal Justice

New York, NY

**Adele Quigley-McBride, PhD**

Wilson Center for Science and Justice

Duke Law

Durham, NC

**John Butler, PhD**

National Institute of Standards and Technology

Gaithersburg, MD

**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.

# PLENARY SESSION

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*Open to All Meeting Registrants*

## ***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 | <b>Welcome and Opening Remarks</b><br><i>C. Ken Williams, JD, MS; Vincent J. Desiderio, Jr., MS, Dean De Crisce, MD</i>                                                       |
| 10:10 AM - 10:40 AM | <b>Individual Panelist Statements</b><br><i>Hon. Bernice Donald, JD; Tiffany Roy, JD; Sarah Chu, PhD; Adele Quigley-McBride, PhD; John Butler, PhD</i>                        |
| 10:40 AM - 11:00 AM | <b>Panel Discussion Part I: Moderated Questions</b><br><i>Hon. Bernice Donald, JD; Tiffany Roy, JD; Sarah Chu, PhD; Adele Quigley-McBride, PhD; John Butler, PhD</i>          |
| 11:00 AM - 11:25 AM | <b>Panel Discussion Part II: Questions from the Audience</b><br><i>Hon. Bernice Donald, JD; Tiffany Roy, JD; Sarah Chu, PhD; Adele Quigley-McBride, PhD; John Butler, PhD</i> |
| 11:25 AM - 11:30 AM | <b>Closing Remarks</b><br><i>C. Ken Williams, JD; MS, Vincent J. Desiderio, Jr., MS, Dean De Crise, MD</i>                                                                    |

# JUSTICE TALKS CASE BREAK SESSIONS

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## 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

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**Stephanie Domitrovich, JD, PhD**  
Senior Judge  
Administrative Office of PA Courts  
Erie, PA

**Milton Nuzum III, JD**  
Former Judge  
Vincent, OH

**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.

# JUSTICE TALKS CASE BREAK SESSIONS

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## CB2 Xylazine—An Emerging Cause of Death in Correctional Institutions

Tuesday, February 20, 2024

8:30 AM – 9:30 AM

CE Hour: 1.0

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**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

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## CB3      Vacuous Accreditation: The Illusion of Quality in Forensic Science

Wednesday, February 21, 2024

7:15 AM – 8:15 AM

CE Hour: 1.0

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**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.

# JUSTICE TALKS CASE BREAK SESSIONS

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## **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

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### **M.J. Menendez, JD**

Senior Fellow/General Counsel  
CFSRE  
Willow Grove, PA

### **Joyce L. deJong, DO**

Professor and Chair  
Department of Pathology  
Western Michigan University  
Homer Stryker M.D. School of Medicine  
Kalamazoo, MI

**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.

# JUSTICE TALKS CASE BREAK SESSIONS

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## 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

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**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 subsample 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 subsample 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.

# JUSTICE TALKS CASE BREAK SESSIONS

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## 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

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### **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.

# JUSTICE TALKS CASE BREAK SESSIONS

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## **CB7      Operation Death Harvester: How the FBI Is Dismembering the Illegal Trade in Human Body Parts**

**Saturday, February 24, 2024**

**9:15 AM – 10:15 AM**

**CE Hour: 1.0**

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**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.

# JUSTICE TALKS CASE BREAK SESSIONS

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## CB8 Online Child Exploitation: Proactive Law Enforcement Strategies

Saturday, February 24, 2024

10:30 AM – 11:30 AM

CE Hour: 1.0

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### 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

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*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:

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### 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.

# LUNCHEON SEMINARS

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*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:

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**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

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*Pre-Registration Required — \$85*

## LS3 Human Spaceflight Medicolegal Death Investigations

Friday, February 23, 2024

12:00 PM – 1:30 PM

CE Hours:

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**Edward Mazuchowski, 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.

# LUNCHEON SEMINARS

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*Pre-Registration Required — \$85*

## LS4      **There Is No I in TEAM: The Importance of Leadership, Personal Accountability, and Personality Type in High Stress Work Environments**

**Friday, February 23, 2024**

**12:00 PM – 1:30 PM**

**CE Hours:**

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### **Charla Skinner Perdue, MFS**

Teaching Faculty II & UG Public Safety & Security Program Coordinator  
Florida State University  
Panama City Campus  
Panama City, FL

**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

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*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**

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**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

### **Britton Morin, MSFS**

Laboratory Director  
Union County Prosecutor's Office  
Forensic Laboratory  
Westfield, NJ

### **Melissa Taylor, BA**

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

### *Co-Chair:*

### **Angela Spessard, MSFS**

Forensic Scientist III  
Maryland State Police  
Pikesville, MD

### **Nikola Osborne, PhD**

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

### **Hope Zagaria, MSFS**

Research Forensic Social Scientist  
RTI International  
Alexandria, VA

### *Presenters:*

### **Mikalaa M. Martin, BS**

Forensic Scientist  
RTI International  
Greenville, SC

### **Tiffany Roy, JD, MSFS**

Forensic DNA Expert  
ForensicAid, LLC  
West Palm Beach, FL

# WORKSHOPS

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

### **Program:**

|                     |                                                                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 9:00 AM   | <b>Participant and Facilitator Introductions</b><br><i>Melissa Taylor, BA</i>                                                                                                                     |
| 9:00 AM – 9:30 AM   | <b>Introduction to the NIST/NIJ Expert Working Group Series</b><br><i>Melissa Taylor, BA</i>                                                                                                      |
| 9:30 AM – 10:00 AM  | <b>Introduction to Key Concepts Used Throughout the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation Report</b><br><i>Nikola Osborne, PhD; Mikalaa M. Martin, BS</i> |
| 10:00 AM – 10:30 AM | <b>Management and Work Environment</b><br><i>Britton Morin, MSFS</i>                                                                                                                              |
| 10:30 AM – 10:45 AM | <b>BREAK</b>                                                                                                                                                                                      |
| 10:45 AM – 11:20 AM | <b>Interpretation and Technology</b><br><i>Hope Zagaria, MSFS; Angela Spessard, MFS</i>                                                                                                           |
| 11:20 AM – 12:00 PM | <b>Quantitative and Qualitative Expressions of DNA Results</b><br><i>Nikola Osborne, PhD; Tiffany Roy, JD, MSFS</i>                                                                               |
| 12:00 PM – 1:00 PM  | <b>BREAK</b>                                                                                                                                                                                      |
| 1:00 PM – 2:00 PM   | <b>Reporting and Testimony</b><br><i>Tiffany Roy, JD, MSFS; Hope Zagaria, MSFS</i>                                                                                                                |
| 2:00 PM – 3:00 PM   | <b>Interpretation of DNA Results Considered Alleged Activities</b><br><i>Nikola Osborne, PhD; Tiffany Roy, JD, MSFS</i>                                                                           |
| 3:00 PM – 3:15 PM   | <b>BREAK</b>                                                                                                                                                                                      |
| 3:15 PM – 4:15 PM   | <b>Education, Training, and Professional Credentialing</b><br><i>Angela Spessard, MSFS</i>                                                                                                        |
| 4:15 PM – 5:00 PM   | <b>Final Thoughts</b><br><i>All Presenters</i>                                                                                                                                                    |

# WORKSHOPS

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*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**

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**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   | <b>Introductions, Workshop Design, and End Goals</b><br><i>Kimberly S. Kunkler, PhD</i>                    |
| 8:45 AM – 9:30 AM   | <b>Historical Background and Overview of Revisions</b><br><i>Laura J. Hernandez, BS</i>                    |
| 9:30 AM – 9:50 AM   | <b>GC/MS: Method Development and Optimization</b><br><i>Laura J. Hernandez, BS</i>                         |
| 9:50 AM – 10:15 AM  | <b>GC/MS: Philosophical Foundations for Performance-Based Requirements</b><br><i>Brenda B. Christy, MS</i> |
| 10:15 AM – 10:30 AM | <b>BREAK</b>                                                                                               |
| 10:30 AM – 11:15 AM | <b>QA/QC: Validation and Verification</b><br><i>Kimberly S. Kunkler, PhD</i>                               |

# WORKSHOPS

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## **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 | <b>Overview of Classification</b><br><i>Laura J. Hernandez, BS</i>                                                              |
| 11:45 AM – 12:45 PM | <b>BREAK</b>                                                                                                                    |
| 12:45 PM – 1:30 PM  | <b>Identification Criteria</b><br><i>Brenda B. Christy, MS</i>                                                                  |
| 1:30 PM – 2:30 PM   | <b>Interpretation Requirements</b><br><i>Brenda B. Christy, MS; Laura J. Hernandez, BS; Kimberly S. Kunkler, PhD</i>            |
| 2:30 PM – 2:45 PM   | <b>BREAK</b>                                                                                                                    |
| 2:45 PM – 4:45 PM   | <b>Practical Exercise—Complex Case Sample</b><br><i>Brenda B. Christy, MS; Laura J. Hernandez, BS; Kimberly S. Kunkler, PhD</i> |
| 4:45 PM – 5:00 PM   | <b>Summary</b><br><i>Brenda B. Christy, MS; Laura J. Hernandez, BS; Kimberly S. Kunkler, PhD</i>                                |

# WORKSHOPS

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*Pre-Registration Required—\$225*

## **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**

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**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

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

### Program:

|                     |                                                                                              |
|---------------------|----------------------------------------------------------------------------------------------|
| 8:30 AM – 9:00 AM   | <b>Session Introduction</b><br><i>Paolo Garofano, MD, PhD</i>                                |
| 9:00 AM – 9:30 AM   | <b>Familiarizing Participants With SpectrApp</b><br><i>Paolo Garofano, MD, PhD</i>           |
| 9:30 AM – 10:30 AM  | <b>Multivariate Data Analysis and Chemometric Strategies</b><br><i>Eugenio Alladio, PhD</i>  |
| 10:30 AM – 11:00 AM | <b>BREAK</b>                                                                                 |
| 11:00 AM – 12:30 PM | <b>Graphical Approaches and Data Visualization Strategies</b><br><i>Eugenio Alladio, PhD</i> |
| 12:30 PM – 1:30 PM  | <b>BREAK</b>                                                                                 |
| 1:30 PM – 3:00 PM   | <b>Supervised Regression Modeling</b><br><i>Eugenio Alladio, PhD</i>                         |
| 3:00 PM – 3:30 PM   | <b>BREAK</b>                                                                                 |
| 3:30 PM – 4:00 PM   | <b>Supervised Regression Modeling</b><br><i>Eugenio Alladio, PhD</i>                         |
| 4:00 PM – 4:30 PM   | <b>Questions and Answers/Discussion</b><br><i>Paolo Garofano, MD, PhD</i>                    |
| 4:30 PM – 5:00 PM   | <b>Closing Remarks</b><br><i>Paolo Garofano, MD, PhD</i>                                     |

# WORKSHOPS

*Pre-Registration Required—\$225*

## W5 Forensic Postmortem Radiology and Medicolegal Death Investigations

Monday, February 19, 2024

8:30 AM – 5:00 PM

CE Hours: 6.75

**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 Zurich  
Zürich, SWITZERLAND

**Program:**

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

# WORKSHOPS

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## W5 Forensic Postmortem Radiology and Medicolegal Death Investigations

### Program continued:

|                     |                                                                                                                 |
|---------------------|-----------------------------------------------------------------------------------------------------------------|
| 10:30 AM – 11:30 AM | <b>Traumatic Injuries and Overdoses</b><br><i>Edward Mazuchowski, MD, PhD</i>                                   |
| 11:30 AM – 12:30 PM | <b>Interactive Cases</b><br><i>All Presenters</i>                                                               |
| 12:30 PM – 1:30 PM  | <b>BREAK</b>                                                                                                    |
| 1:30 PM – 2:00 PM   | <b>Postmortem Imaging: International Perspective</b><br><i>Michael J. Thali, MD</i>                             |
| 2:00 PM – 2:30 PM   | <b>3D Visualization and Court Presentation</b><br><i>Summer J. Decker, PhD</i>                                  |
| 2:30 PM – 3:00 PM   | <b>Emerging Technologies in Forensic Imaging</b><br><i>Jonathan M. Ford, PhD; Lars Ebert, PhD</i>               |
| 3:00 PM – 3:15 PM   | <b>BREAK</b>                                                                                                    |
| 3:15 PM – 3:45 PM   | <b>Interactive Cases</b><br><i>All Presenters</i>                                                               |
| 3:45 PM – 4:15 PM   | <b>Development of a Forensic Imaging Service in a Medical Examiner Office</b><br><i>Natalie L. Adolphi, PhD</i> |
| 4:15 PM – 5:00 PM   | <b>Panel Discussion With Audience Participation</b><br><i>All Presenters</i>                                    |

# 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

**A. Karl Larsen, Jr., PhD**

Clinical Professor of Forensic Science

University of Illinois at Chicago

Chicago, IL

**Sarah Seashols Williams, PhD**

Associate Professor

Virginia Commonwealth University

Richmond, VA

*Co-Chair:*

**Julie A. Howe, MBA**

Associate Professor

Saint Louis University

Saint Louis, MO

**Jennifer Limoges, MS**

Associate Director of Forensic Science/

Toxicology

New York State Police

Albany, NY

**Britni Skillman, PhD**

Assistant Professor

Sam Houston State University

Huntsville, TX

*Presenters:*

**Teresa L. Ambrosius, BA**

Secretariat

AAFS Standards Board

Colorado Springs, CO

**Arely J. Parra López, BS**

Graduate Student Researcher

The George Washington University

Eaton, CO

**Peter Stout, PhD**

President and CEO

Houston Forensic Science Center

Houston, TX

**McKenzie Weyh, BS**

Forensic Document Examiner

Michigan State Police

Lansing, MI

# WORKSHOPS

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## **W6      Don't Know Much About Standards: Incorporating Forensic Science Standards Into University Curricula**

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### **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*
- 9:45 AM – 10:15 AM      **Making Forensic Science Standards a Curriculum-Wide Standard Practice**  
*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*

# 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, MPharm**  
Scientific Analyst  
EMCDDA  
Lisbon, PORTUGAL

**Erin Karschner, PhD**

Forensic Toxicologist  
Armed Forces Medical Examiner System  
Dover AFB, DE

**Nicole Lattanzio, MS**

Forensic Chemistry Technical Director  
NMS Labs  
Willow Grove, PA

**Barry K. Logan, PhD**

Executive Director  
CFSRE  
Horsham, PA

# WORKSHOPS

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## W7      Emerging Semi-Synthetic Cannabinoids: THC Isomers and Analogs

### Program:

|                     |                                                                                                    |
|---------------------|----------------------------------------------------------------------------------------------------|
| 8:00 AM – 8:30 AM   | <b>THC Legislation and Scheduling in the United States</b><br><i>Barry K. Logan, PhD</i>           |
| 8:30 AM – 9:00 AM   | <b>Analytical Methods Used in Seized Drug Materials</b><br><i>Sarah A. Shuda, MS</i>               |
| 9:00 AM – 9:30 AM   | <b>Seized Drug Trends and Results</b><br><i>Nicole Lattanzio, MS</i>                               |
| 9:30 AM – 9:45 AM   | <b>BREAK</b>                                                                                       |
| 9:45 AM – 10:30 AM  | <b>European Perspectives on Semi-Synthetic Cannabinoids</b><br><i>Joanna De Moraes, MPharm</i>     |
| 10:30 AM – 11:05 AM | <b>Overview: Potency and Pharmacological Activity of THC Analogs</b><br><i>Erin Karschner, PhD</i> |
| 11:05 AM – 11:45 AM | <b>Toxicology Analytical Methods and Trends</b><br><i>Ayako Chan-Hosokawa, MS</i>                  |
| 11:45 AM – 12:00 PM | <b>Questions and Answers</b>                                                                       |

# 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

*Presenters:*

**Sean P. Dugan, MD**

Director of Forensic Services

Shasta Community Forensic Care Team

Shasta Community Health Center

Redding, CA

**Patricia M. Speck, DNSc**

Professor/Coordinator of Advanced

Forensic Nursing

University of Alabama at Birmingham

School of Nursing

Hoover, AL

*Co-Chair:*

**Kathy Bell, MS**

Adjunct Faculty

Oklahoma State University

Center for Health Sciences

Tulsa, OK

**Diana A. Faugno, MSN**

Forensic Nurse

AFN

Escondido, CA

**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*

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

# WORKSHOPS

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*Pre-Registration Required—\$125*

## **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**

**Monday, February 19, 2024**

**1:00 PM – 5:00 PM**

**CE Hours: 3.5**

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**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

# WORKSHOPS

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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:**

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

# WORKSHOPS

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***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**

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**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

# WORKSHOPS

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

### **Program:**

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

# WORKSHOPS

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***Pre-Registration Required—\$125***

## **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**

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**Program Description:** This presentation will provide an overview of the of 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

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

### **Program:**

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|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:10 PM | <b>Welcome to the Workshop/Introduction</b><br><i>Gregory I. Mack, PhD; Daniel A. Martell, PhD</i>                                                              |
| 1:10 PM – 1:30 PM | <b>Police Officers Injured in the Line Of Duty: A Clear and Present Danger</b><br><i>Gregory I. Mack, PhD</i>                                                   |
| 1:30 PM – 2:45 PM | <b>Case Review: An Analysis of the Facts, the Injuries, and the Recovery</b><br><i>Learie C. Johnston, BA; Matthew Frank, Paul Puccini; Gregory I Mack, PhD</i> |
| 2:45 PM – 3:00 PM | <b>BREAK</b>                                                                                                                                                    |
| 3:00 PM – 3:25 PM | <b>Prevalence of Traumatic Brain Injury and Comorbid Disorders Among First Responders</b><br><i>Gregory I. Mack, PhD</i>                                        |
| 3:25 PM – 3:50 PM | <b>Forensic Interpretation of Medical Images</b><br><i>Jamie Elifritz, MD</i>                                                                                   |
| 3:50 PM – 4:15 PM | <b>Police Peer Support Programs: A Moral and Ethical Duty of Care</b><br><i>Learie C. Johnston, BA; Matthew Frank, Paul Puccini; Gregory I Mack, PhD</i>        |
| 4:15 PM – 4:30 PM | <b>Discussion/Questions</b><br><i>All Presenters</i>                                                                                                            |

# WORKSHOPS

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*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**

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**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

# WORKSHOPS

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

### **Program:**

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

# WORKSHOPS

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*Pre-Registration Required—\$225*

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

**Tuesday, February 20, 2024**

**8:30 AM – 5:30 PM**

**CE Hours: 6.75**

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**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 testimony in 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

*Presenter:*

**Simone Gittelson, PhD**

Forensic Statistician/Lecturer

DC Department of Forensic Sciences

Washington, DC

# WORKSHOPS

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

### Program:

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|---------------------|--------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM   | <b>Opening Remarks</b><br><i>Tim Kalafut, PhD</i>                                                |
| 8:45 AM – 9:30 AM   | <b>Great Expectations</b><br><i>Tim Kalafut, PhD</i>                                             |
| 9:30 AM – 10:45 AM  | <b>ISFG Recommendations 2020</b><br><i>Simone Gittelson, PhD</i>                                 |
| 10:45 AM – 11:00 AM | <b>BREAK</b>                                                                                     |
| 11:00 AM – 11:20 AM | <b>Probabilities and Reporting in Evaluative Testimony</b><br><i>Simone Gittelson, PhD</i>       |
| 11:20 AM – 12:10 PM | <b>What is the Likelihood of Explaining This Ratio</b><br><i>Tim Kalafut, PhD</i>                |
| 12:10 PM – 12:30 PM | <b>Introduction to Bayesian Networks</b><br><i>Simone Gittelson, PhD</i>                         |
| 12:30 PM – 1:30 PM  | <b>BREAK</b>                                                                                     |
| 1:30 PM – 2:00 PM   | <b>Introduction to Case Pre-Assessment Exercise</b><br><i>Simone Gittelson, PhD</i>              |
| 2:00 PM – 3:15 PM   | <b>Case Pre-Assessment Exercise</b>                                                              |
| 3:15 PM – 3:45 PM   | <b>Case Pre-Assessment Exercise Discussion</b><br><i>Tim Kalafut, PhD; Simone Gittelson, PhD</i> |
| 3:45 PM – 4:00 PM   | <b>BREAK</b>                                                                                     |
| 4:00 PM – 5:00 PM   | <b>Court Testimony</b>                                                                           |
| 5:00 PM – 5:30 PM   | <b>Questions and Answers/Closing Remarks</b>                                                     |

# 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 Deep-Voice, 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   | <b>Audio 1</b><br><i>Catalin Grigoras, PhD</i> |
| 9:45 AM – 10:15 AM  | <b>Questions and Answers/Discussion</b>        |
| 10:15 AM – 10:30 AM | <b>BREAK</b>                                   |
| 10:30 AM – 11:45 AM | <b>Audio 2</b><br><i>Catalin Grigoras, PhD</i> |
| 11:45 AM – 12:15 PM | <b>Questions and Answers/Discussion</b>        |
| 12:15 PM – 1:30 PM  | <b>BREAK</b>                                   |
| 1:30 PM – 2:45 PM   | <b>Video 1</b><br><i>Zeno J. Geradts, PhD</i>  |
| 2:45 PM – 3:15 PM   | <b>Questions and Answers/Discussion</b>        |
| 3:15 PM – 3:30 PM   | <b>BREAK</b>                                   |
| 3:30 PM – 4:45 PM   | <b>Video 2</b><br><i>Zeno J. Geradts, PhD</i>  |
| 4:45 PM – 5:15 PM   | <b>Questions and Answers/Discussion</b>        |

# WORKSHOPS

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*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**

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**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

**James L. Caruso, MD**

Chief Medical Examiner

Office of the Medical Examiner

Denver, CO

### *Co-Chair:*

**Gina Londino-Smolar, MS**

Teaching Professor

Forensic & Investigative Sciences Program

Department of Chemistry & Chemical Biology

Indiana University–Purdue University Indianapolis

Indianapolis, IN

**Marc A. LeBeau, PhD**

Senior Forensic Scientist

FBI Laboratory

Quantico, VA

**Michelle Medina, JD**

Managing Partner

The Baez Law Firm

Miami, FL

### *Presenters:*

**Craig Ackley, MS**

Co-Founder & Head of Product Development/President

Compendia, Inc.

Forensic Case Solutions, Inc.

Nashville, TN

**Kenneth E. Melson, JD**

Professorial Lecturer at Law

The George Washington University

Kinsale, VA

**Tamela Adkins, JD**

Superior Court Judge

Gwinnett County Georgia

Lawrenceville, GA

# WORKSHOPS

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

### **Program:**

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|---------------------|------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:40 AM   | <b>Welcome and Introduction</b><br><i>Gina Londino-Smolar, MS; J.C.U. Downs, MD</i>                        |
| 8:40 AM – 9:30 AM   | <b>Perspectives: Judges</b><br><i>Tamela Adkins, JD</i>                                                    |
| 9:30 AM – 10:15 AM  | <b>Perspectives: Prosecutorss</b><br><i>Kenneth E. Melson, JD</i>                                          |
| 10:15 AM – 10:30 AM | <b>BREAK</b>                                                                                               |
| 10:30 AM – 11:15 AM | <b>Perspectives: Defense Attorneys</b><br><i>Michelle Medina, JD</i>                                       |
| 11:15 AM – 11:45 AM | <b>Questions and Answers Panel</b><br><i>Tamela Adkins, JD; Kenneth E. Melson, JD; Michelle Medina, JD</i> |
| 11:45 AM – 1:00 PM  | <b>BREAK</b>                                                                                               |
| 1:00 PM – 1:45 PM   | <b>Perspectives: Crime Scene Analysis</b><br><i>Craig Ackley, MS</i>                                       |
| 1:45 PM – 2:30 PM   | <b>Perspectives: Forensic Scientists</b><br><i>Marc A. LeBeau, PhD</i>                                     |
| 2:30 PM – 2:45 PM   | <b>BREAK</b>                                                                                               |
| 2:45 PM – 3:30 PM   | <b>Perspectives: Forensic Pathologists</b><br><i>James L. Caruso, MD</i>                                   |
| 3:30 PM – 4:15 PM   | <b>Questions and Answers Panel</b><br><i>Craig Ackley, MS; Marc A. LeBeau, PhD; James L. Caruso, MD</i>    |
| 4:15 PM – 4:30 PM   | <b>Closing</b><br><i>J.C.U. Downs, MD; Gina Londino-Smolar, MS</i>                                         |

*Proceeds from this workshop will benefit the Forensic Sciences Foundation*



# 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  | <b>Introduction and Probability Concepts</b><br><i>Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS</i>                                |
| 10:00 AM – 10:30 AM | <b>BREAK</b>                                                                                                                           |
| 10:30 AM – 12:00 PM | <b>Forensic Conclusions and Expert Opinions/Black Box Studies</b><br><i>Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS</i>           |
| 12:00 PM – 1:00 PM  | <b>BREAK</b>                                                                                                                           |
| 1:00 PM – 2:30 PM   | <b>Statistical Methods and the Two-Stage Approach to Forensic Inference</b><br><i>Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS</i> |
| 2:30 PM – 3:00 PM   | <b>BREAK</b>                                                                                                                           |
| 3:00 PM – 4:30 PM   | <b>The Likelihood Ratio in Forensic Science</b><br><i>Hal S. Stern, PhD; Michael J. Salyards, PhD, MFS</i>                             |

# WORKSHOPS

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*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**

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**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

# WORKSHOPS

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

### **Program:**

|                     |                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 10:00 AM  | <b>What is Reconstruction?</b><br><i>Douglas Young</i>                                                                                            |
| 10:00 AM – 10:15 AM | <b>BREAK</b>                                                                                                                                      |
| 10:15 AM – 11:30 AM | <b>Requirements for Crime Scene Reconstruction</b><br><i>Douglas Young; Steve Downs, DBA</i>                                                      |
| 11:30 AM – 1:00 PM  | <b>BREAK</b>                                                                                                                                      |
| 1:00 PM – 2:15 PM   | <b>Foundational Pillars to Reconstruction</b><br><i>Douglas Young</i>                                                                             |
| 2:15 PM – 2:30 PM   | <b>BREAK</b>                                                                                                                                      |
| 2:30 PM – 4:00 PM   | <b>Data Acquisition Thoughts/Questions/Organization</b><br><i>Douglas Young; Bryan W. Brendley, PhD</i>                                           |
| 4:00 PM – 4:15 PM   | <b>BREAK</b>                                                                                                                                      |
| 4:15 PM – 5:30 PM   | <b>Practical Exercises Involving All Participants Regarding a Mock BPA and Projectile/<br/>Ballistics Reconstruction</b><br><i>All Presenters</i> |

# 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

*Presenters:*

**Travis Walthall, MS**

Missouri Southern State University  
Joplin, MO

**Timothy Wilson, PhD**

Missouri Southern State University  
Joplin, MO

*Co-Chair:*

**Patricia Smith, MSL**

Harris County District Attorney's Office  
Houston, TX

**Patricia Williams, MS, RN**

Retired  
Franklin, TN

**Program:**

|                     |                                                                                                     |
|---------------------|-----------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:35 AM   | <b>Introductions</b><br><i>Patricia Williams, MS, RN</i>                                            |
| 8:35 AM – 9:05 AM   | <b>A Case Study of the Umpqua Community College Shooting</b><br><i>Timothy Wilson, PhD</i>          |
| 9:05 AM – 9:35 AM   | <b>Historical Perspective: High Schools vs. Colleges</b><br><i>Betsy Adelizzi, PhD</i>              |
| 9:35 AM – 10:05 AM  | <b>Weaponry and Victimology: Injury Patterns</b><br><i>Travis Walthall, MS; Timothy Wilson, PhD</i> |
| 10:05 AM – 10:15 AM | <b>Case Review</b><br><i>Timothy Wilson, PhD; Betsy Adelizzi, PhD</i>                               |
| 10:15 AM – 10:35 AM | <b>BREAK</b>                                                                                        |

# WORKSHOPS

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

### **Program continued:**

|                     |                                                                                                       |
|---------------------|-------------------------------------------------------------------------------------------------------|
| 10:35 AM – 11:05 AM | <b>Shooter Profiles, Mental Illness, Behaviors</b><br><i>Betsy Adelizzi, PhD; Timothy Wilson, PhD</i> |
| 11:05 AM – 11:35 AM | <b>Legal and Legislative Responses</b><br><i>Patricia Smith, MSL</i>                                  |
| 11:35 AM – 12:05 PM | <b>Training and Response Times</b><br><i>Travis Walthall, MS</i>                                      |
| 12:05 PM – 12:15 PM | <b>Case Review</b><br><i>Betsy Adelizzi, PhD; Patricia Smith, MSL</i>                                 |
| 12:15 PM – 12:30 PM | <b>Questions and Answers</b><br><i>All Presenters</i>                                                 |

# WORKSHOPS

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*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**

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**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:*

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

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

**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

**Sarah A. Shuda, MS**  
Senior Scientist  
CFSRE  
Willow Grove, PA

# WORKSHOPS

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## W19 Forensic Scientists on the Front Lines

### Program:

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

# WORKSHOPS

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***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  
Phoenix, AZ

***Presenter:***

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

**Program:**

|                     |                                                                                                                                         |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 9:00 AM   | <b>Introduction</b><br><i>Laura C. Fulginiti, PhD</i>                                                                                   |
| 9:00 AM – 9:45 AM   | <b>Seeing and Understanding Risk</b><br><i>K. Scott Griffith, MS</i>                                                                    |
| 9:45 AM – 10:15 AM  | <b>Risk in Forensic Practice</b><br><i>Brian J. Gestring, MS</i>                                                                        |
| 10:15 AM – 10:30 AM | <b>BREAK</b>                                                                                                                            |
| 10:30 AM – 11:15 AM | <b>Strategies for Organizational Reliability</b><br><i>K. Scott Griffith, MS</i>                                                        |
| 11:15 AM – 11:35 AM | <b>Obstacles to Managing Risk and Building Resiliency in Forensic Practice</b><br><i>Laura C. Fulginiti, PhD; Brian J. Gestring, MS</i> |
| 11:35 AM – 12:00 PM | <b>Moving Toward High Reliability in Your Operation</b><br><i>All Presenters</i>                                                        |

# 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 | <b>Opening Remarks and Introduction</b><br><i>James R. Gill, MD</i> |
| 1:05 PM – 1:45 PM | <b>Investigation</b><br><i>Kelly Keyes, BS</i>                      |
| 1:45 PM – 2:30 PM | <b>Autopsy</b><br><i>Candace H. Schoppe, MD</i>                     |
| 2:30 PM – 2:45 PM | <b>BREAK</b>                                                        |
| 2:45 PM – 3:30 PM | <b>Toxicology Testing</b><br><i>Laura Labay, PhD</i>                |
| 3:30 PM – 4:15 PM | <b>Interpretation and Certification</b><br><i>James R. Gill, MD</i> |
| 4:15 PM – 4:30 PM | <b>Closing Remarks and Questions</b><br><i>Laura Labay, PhD</i>     |

# 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:*

**Michael 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 | <b>Welcome, Introductions, Discussion of Mock Trial</b><br><i>Colleen Fitzpatrick, PhD</i>                                                                                                                                                                                                             |
| 1:15 PM – 1:45 PM | <b>Expert Witness Testimony and the Judicial Environment</b><br><i>Mike Coble, PhD</i>                                                                                                                                                                                                                 |
| 1:45 PM – 2:00 PM | <b>Introduction to Mock Trial Case</b><br><i>Karra Porter; Mitch Morrissey, JD</i>                                                                                                                                                                                                                     |
| 2:00 PM – 3:15 PM | <b>Mock Trial With Real Time Prosecution and Defense Analyses: Expert Witness Credentials; Information Obtained From Law Enforcement; Controversies Involving Forensic Practitioners</b><br><i>Colleen Fitzpatrick, PhD; Mitch Morrissey, JD; Karra Porter</i>                                         |
| 3:15 PM – 3:30 PM | <b>BREAK</b>                                                                                                                                                                                                                                                                                           |
| 3:30 PM – 4:45 PM | <b>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</b><br><i>Colleen Fitzpatrick, PhD; Mitch Morrissey, JD; Karra Porter</i> |
| 4:45 PM – 5:00 PM | <b>Closing Remarks and Discussion</b><br><i>All Presenters</i>                                                                                                                                                                                                                                         |

# WORKSHOPS

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***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**

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**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

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

### Program:

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

# 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 Room 205 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*

9:30 AM – 9:55 AM **Fast Fluorescence Mapping and Raman Spectroscopy for Detection and Confirmatory Identification of Gunshot Residue**  
*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**  
*Luis Arroyo, West Virginia University*

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*

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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**

## **Session III – Seized Drugs and Toxicology**

*Moderated by NIJ Program Manager, Frances Scott*

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**

## **Session IV – Forensic Biology/DNA**

*Moderated by NIJ Program Manager, Tracey Johnson*

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*

4:10 PM – 4:35 PM **Evaluation of the ForenSeq™ MainstAY Kit and Comparing Standard- and Micro-Flow Cells**

*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*

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## Poster Session

The poster presentations will be from 5:00pm MST to 6:30pm MST in Meeting Rooms 201 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  $\mu$ XRF 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  $\mu$ XRF 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*

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## **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*

# ANTHROPOLOGY

## Wednesday

### Poster Session

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

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| 11:30 AM – 1:00 PM | <b>A11</b> | <b>Skeletal Indicators of Down Syndrome: A Case Study in Forensic Anthropology</b><br><i>Theresa M. De Cree, MS, BA; Ivanna Robledo, MA*; Emily Brooks, MS</i>                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>A12</b> | <b>The Characteristics of a Vertebroplasty in Human Skeletal Remains</b><br><i>Nicholas V. Passalacqua, PhD*; Rebecca L. George, PhD; Emma F. Taylor; Nuwan Perara; Erin Chapman, PhD</i>                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>A13</b> | <b>An Unusual Case of Human Remains Found in an Urban Aqueduct</b><br><i>Stephanie Torres, MS*; Ellen Fricano, PhD</i>                                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>A14</b> | <b>Understanding the Potential of Chemical Anthropology in Burned Human Remains</b><br><i>Calil I. Makhoul, MSc*; Luís A.E. Batista de Carvalho; David Gonçalves, PhD; Eugénia Cunha, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                         |
| 11:30 AM – 1:00 PM | <b>A15</b> | <b>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</b><br><i>Elayne J. Pope, PhD*; Alison Galloway, PhD; Chelsey A. Juarez, PhD; James G. Quintiere, PhD; Riccardo Torres, AAS</i> |
| 11:30 AM – 1:00 PM | <b>A16</b> | <b>An Evaluation of Commingled Remains Using Computational Methods to Reconstruct Dental MNI Based on Dental Wear</b><br><i>Melanie Need, BSc*; Xenia Paula Kyriakou, PhD; Tim Eckhardt, BSc</i>                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>A17</b> | <b>MNI, NIDS, Centroids: Additional Considerations for Individuating Commingled Remains Using Stable Isotope Ratios</b><br><i>Stephanie B. Hartley, MA*; Lesley A. Chesson, MS; Gregory E. Berg, PhD</i>                                                                                                             |
| 11:30 AM – 1:00 PM | <b>A18</b> | <b>The Accuracy and Reliability of Visual Pair Matching Lower Limb Bones in a Commingled Skeletal Assemblage</b><br><i>Abigail K. Kindler, MA*; Cortney N. Hulse, PhD; Carrie LeGarde, MA</i>                                                                                                                        |
| 11:30 AM – 1:00 PM | <b>A19</b> | <b>Assessing the Impact of Opioid Use on Human Clavicles Through Clinical Computed Tomography (CT): A Pilot Study</b><br><i>Randi M. Depp, MS*; Reed A. Davis, PhD; Evin Hessel, MS</i>                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>A20</b> | <b>An Evaluation and Integration of Disparate Classification Schemes for Interparietal Bones in the Human Crania</b><br><i>Rhian R. Dunn, MS*; Holly Long, MS; Melissa Clarkson, MDes, PhD; Joe T. Hefner, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                    |
| 11:30 AM – 1:00 PM | <b>A21</b> | <b>Is Bone Speed of Sound Affected by the Molecular Composition of Infant Bone?</b><br><i>Miriam E. Soto Martinez, PhD*; Jason M. Wiersema, PhD; Christian Crowder, PhD; Angela Bachim, MD</i>                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>A22</b> | <b>Laser Me This: Using Laser-induced Breakdown Spectroscopy to Detect Formalin in Human Remains</b><br><i>Morghana Montana Hogg, BS*; Micki Besse, MS; Savanna Agilar, MS; Heather A. Walsh-Haney, PhD; Jay Radtke, MD</i>                                                                                          |
| 11:30 AM – 1:00 PM | <b>A23</b> | <b>An Application of Dietary Isotopes to Estimate Temporal Context of Unidentified Human Remains in British Columbia, Canada</b><br><i>Damon C. Tarrant, BA*; Laura Yazedjian, MSc, BA; Michael Richards, PhD</i>                                                                                                    |

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| 11:30 AM – 1:00 PM | <b>A24</b> | <b>How Low Can You Go? A Lower Bound Limit for <math>\delta^{15}\text{N}</math> Values From Human Bone Collagen</b><br><i>Amanda N. Friend, PhD*</i> ; <i>Claire Maass, PhD</i> ; <i>Lesley A. Chesson, MS</i> ;<br><i>Gregory E. Berg, PhD</i> |
| 11:30 AM – 1:00 PM | <b>A25</b> | <b>Taphonomic Effects on the C:N Ratio and <math>\delta^{13}\text{C}</math> and <math>\delta^{15}\text{N}</math> Isotopes in Bone Collagen</b><br><i>Nicole Long*</i> ; <i>Ann H. Ross, PhD</i> ; <i>Ethan Hyland</i>                           |
| 11:30 AM – 1:00 PM | <b>A26</b> | <b>Using Forensic Anthropological Landmarks to Optimize DNA Extractions From Post-Cranial Remains</b><br><i>Keith Biddle, MA, PhD*</i>                                                                                                          |
| 11:30 AM – 1:00 PM | <b>A27</b> | <b>Validation and Quality Control of 3D Coordinate Data From Human Crania for Forensic Casework</b><br><i>Amanda R. Hale, MA*</i> ; <i>Rebecca J. Taylor, PhD</i>                                                                               |
| 11:30 AM – 1:00 PM | <b>A28</b> | <b>A Multivariate Analysis and Evaluation of Classification of Human Skeletal Vertebrae for an Applied Context</b><br><i>Jolen Anya Minetz, MA*</i> ; <i>Stephen Ousley, PhD (posthumously)</i>                                                 |

## Thursday

### Poster Session

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| 11:30 AM – 1:00 PM | <b>A29</b> | <b>Investigating Applications of Forensic Fractography of Bone Over the Postmortem Interval</b><br><i>Carter A. Unger, BS*</i> ; <i>Mariyam I. Isa, PhD</i>                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>A30</b> | <b>Measuring Volatile Organic Compounds (VOCs) From Decomposing Human Tissue</b><br><i>Sheana S. Ramcharan, MS, BS*</i> ; <i>Luis L. Cabo, MS</i> ; <i>Jack D. Williams, PhD</i> ;<br><i>Michael S. Foulk, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                 |
| 11:30 AM – 1:00 PM | <b>A31</b> | <b>Tracing PMI Through Bone Metabolomics With GC/MS and LC/MS/MS</b><br><i>Elisa Roggia, BS*</i> ; <i>Luke William Gent, BSc, MRes</i> ; <i>Andrea Bonicelli, PhD, MA</i> ;<br><i>Noemi Procopio, PhD</i> ; <i>Eugenio Alladio</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation) |
| 11:30 AM – 1:00 PM | <b>A32</b> | <b>Using Evidence of Microbial Modifications on Postmortem Bone Surfaces to Narrow Down Time Since Death Estimations</b><br><i>Caroline Rowe, PhD*</i>                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>A33</b> | <b>The Megyesi Total Body Score Method: Inter-Observer Agreement and Sources of Bias</b><br><i>Tempest D. Mellendorf, MS*</i> ; <i>Madeline R. Leggiero; Allyson M. Simon, MS</i> ;<br><i>Varun V. Tewari, BS, BA</i> ; <i>Luis L. Cabo, MS</i>                                                   |
| 11:30 AM – 1:00 PM | <b>A34</b> | <b>Using Artificial Intelligence: Deep Learning for Human Decomposition Staging</b><br><i>Anna-Maria Nau, BA*</i> ; <i>Phillip Ditto, BA*</i> ; <i>Audris Mockus, PhD</i> ; <i>Dawnie W. Steadman, PhD</i>                                                                                        |
| 11:30 AM – 1:00 PM | <b>A35</b> | <b>Testing Decomposition Scoring Methods at FOREST in Cullowhee, North Carolina</b><br><i>Leilah Melerine*</i> ; <i>Rebecca L. George, PhD</i> ; <i>Nicholas V. Passalacqua, PhD</i>                                                                                                              |
| 11:30 AM – 1:00 PM | <b>A36</b> | <b>It's a Dry Heat: Testing Existing Postmortem Interval (PMI) Equations in Clark County, Nevada</b><br><i>Dayanira Lopez, MS*</i> ; <i>Claire Ralston, PhD</i> ; <i>Jennifer F. Byrnes, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                   |

# ANTHROPOLOGY

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| 11:30 AM – 1:00 PM | <b>A37</b> | <b>Postmortem Interval in the Pacific Northwest—King County, Washington</b><br><i>Kiana C. Miller, BS*</i> ; <i>Andrew C. Seidel, PhD</i>                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>A38</b> | <b>A Drop in the Bucket: An Analysis of Southwest Florida Weather Station Variables to Inform Postmortem Interval</b><br><i>Savanna Agilar, MS*</i> ; <i>Micki Besse, MS</i> ; <i>Heather A. Walsh-Haney, PhD</i>                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>A39</b> | <b>Under the Weather: A Report of Faunal Scavenger Activity During Major Weather Systems Within a Taphonomic Facility in Southwest Florida</b><br><i>Micki Besse, MS*</i> ; <i>Savanna Agilar, MS</i> ; <i>Heather A. Walsh-Haney, PhD</i>                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>A40</b> | <b>Exploring the Scavenging Behavior of Bobcats, <i>Lynx Rufus</i>, in the Middle Tennessee Area and Its Forensic Implications</b><br><i>Yangseung Jeong, PhD</i> ; <i>Aaron Gatewood*</i>                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>A41</b> | <b>A Longitudinal Observation of Pattern and Trajectory of Packrat Scavenging Among a Cohort of Human Donors</b><br><i>Christiane I. Baigent, MSc*</i>                                                                                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>A42</b> | <b>Multiple Scavenging Agents: The Effect of Termite and Canine Scavenging on Forensic Cases in Northern Thailand</b><br><i>Sittiporn Ruengdit*</i> ; <i>Sangob Sanit</i> ; <i>Kwankamol Limsopatham</i>                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>A43</b> | <b>Soft Tissue Scavenging Patterns of Mice on Human Remains</b><br><i>Alexander J. Smith, BA*</i>                                                                                                                                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>A44</b> | <b>Corpse Concealment by Use of a Foundry Furnace: An Experimental Study on a Swine Carcass</b><br><i>Matteo D'Angiolillo, MD*</i> ; <i>Ilaria Grasso, MD</i> ; <i>Alessandro Bonsignore, MD, PhD</i> ; <i>Francesca Frigiolini, MD</i> ; <i>Francesco Ventura, MD, PhD</i> ; <i>Camilla Tettamanti, MD, PhD</i> (FSF Emerging Forensic Scientist Award Poster Presentation) |
| 11:30 AM – 1:00 PM | <b>A45</b> | <b>Determining Forensic Significance: Pilot Observations of the Taphonomic Patterning of Greek-Orthodox Cemetery Inhumations in Cyprus</b><br><i>Samantha Cohen, MRes, BA*</i> ; <i>Xenia Paula Kyriakou, PhD</i>                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>A46</b> | <b>The Resilience of Cut Mark Characteristics: An Experimental Study on the Effect of Corrosive Chemicals</b><br><i>Maisy Jordan, MSc*</i> ; <i>Matteo Borrini, PhD, MS*</i>                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>A47</b> | <b>The Resilience of Cut Mark Characteristics: An Experimental Study on the Effect of Fire Exposure</b><br><i>Katie Griffiths, BSc, MSc</i> ; <i>Matteo Borrini, PhD, MS*</i>                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>A48</b> | <b>In Full or in Part: The Effect of Incomplete Remains on Trauma Analysis</b><br><i>Hailey Scacciaferro, BS*</i> ; <i>Savanna Agilar, MS</i> ; <i>Micki Besse, MS</i> ; <i>Heather A. Walsh-Haney, PhD</i>                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>A49</b> | <b>A Case Presentation of Fractures to the Wrists and Hands in a Suicide and Homicide</b><br><i>Tuesday M. Frasier, MS*</i> ; <i>Erin H. Kimmerle, PhD</i>                                                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>A50</b> | <b>Tibia Size and the Contribution to Variance in Fracture Outcomes</b><br><i>Angela L. Harden, PhD*</i> ; <i>Kyra Stull, PhD</i> ; <i>Yun-Seok Kang, PhD</i> ; <i>Amanda M. Agnew, PhD</i>                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>A51</b> | <b>An Analysis of Lower Extremity Fracture Patterning in Fatal Motor Vehicle Collisions</b><br><i>Lillian S. Antonelli, BS*</i> ; <i>Jered B. Cornelison, PhD</i> ; <i>Christine M. Pink, PhD</i>                                                                                                                                                                            |

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| 11:30 AM – 1:00 PM | <b>A52</b> | <b>Establishing a Skeletal Atlas of Elder Abuse: An Examination of the Relationship Between Bone Density and Skeletal Fractures in Accidental Falls and Suspected Abuse</b><br><i>Emelia Jensen; Kaitlyn J. Fulp, MA; Jacob A. Harris, PhD; Jane E. Buikstra, PhD; Laura C. Fulginiti, PhD; Katelyn L. Bolhofner, PhD*</i> |
| 11:30 AM – 1:00 PM | <b>A53</b> | <b>Assessing Variability in Kerf Floor Shape Utilizing a Revised Set of Shape Categories</b><br><i>Meghan M. Gast, BS*; Alexis L. VanBaarle, MS; Ann L. Braverman; Heather M. Garvin, PhD</i>                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>A54</b> | <b>A Comparison of Fatal and Non-Fatal Postcranial Gunshot Wounds</b><br><i>Sam W. Coberly, PhD*</i>                                                                                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>A55</b> | <b>The Patterning of Fracture Characteristics in Gunshot Wounds in Long Bones</b><br><i>Alexandra Semma Tamayo, MSc*; Laure Spake, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>A56</b> | <b>An Analysis of Bevel Angle in Gunshot Trauma to Long Bones</b><br><i>Devin L. Adcox, MA*; Ashley Kendell, PhD; Eric J. Bartelink, PhD</i>                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>A57</b> | <b>A Comparison Between Full Metal Jacket and Hollow Point Projectile Effects on Bone</b><br><i>Joe Adserias-Garriga*; Roberto Escudero-Izquierdo</i>                                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>A58</b> | <b>Antemortem Trauma and Trauma Reporting in the Texas State Donated Skeletal Collection</b><br><i>Theresa M. De Cree, MS, BA*; Emma M. Giacomello, MA; Katie Gerstner, MA; Elizabeth Moore, MA; Michelle D. Hamilton, PhD</i>                                                                                             |

## Thursday—Session I

### Achieving Justice for All: The Evolving Role of Forensic Anthropology

Moderator: Derek, Boyd, PhD

Co-Moderator: Gabriela Rios Santiago, MSc

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| 8:30 AM – 8:45 AM   | <b>A59</b> | <b>Standards Development in Forensic Anthropology: Updates From the OSAC and ASB</b><br><i>Eric J. Bartelink, PhD*; Julie M. Fleischman, PhD; Wendy E.P. McQuade, PhD</i>    |
| 8:45 AM – 9:00 AM   | <b>A60</b> | <b>Assessing the Place and Feasibility of Activism and Advocacy in Forensic Anthropology</b><br><i>Sadie R. Friend, BS*</i>                                                  |
| 9:00 AM – 9:15 AM   | <b>A61</b> | <b>ForensicAnthroTok: The Depiction of Forensic Anthropology on TikTok</b><br><i>Donovan M. Adams, PhD*; C M. Trent, MA; Jasper K. Sharpless, BA</i>                         |
| 9:15 AM – 9:30 AM   | <b>A62</b> | <b>Forensic Anthropology and Structural Vulnerability in Casework</b><br><i>Jaymelee Kim, PhD*; Allysha P. Winburn, PhD</i>                                                  |
| 9:30 AM – 9:45 AM   | <b>A63</b> | <b>Justice for All Missing: The Mississippi Repository for Missing and Unidentified Persons</b><br><i>Jesse R. Goliath, PhD*; Jordan Lynton Cox, PhD; Elise J. Adams, BA</i> |
| 9:45 AM – 10:00 AM  | <b>A64</b> | <b>The Cold Case Initiative: Bringing Cases Up to Current Investigative Standards</b><br><i>Erin H. Kimmerle, PhD*</i>                                                       |
| 10:00 AM – 10:15 AM | <b>A65</b> | <b>The East Marshall Street Well Project: Community-Driven Research to Restore Identity and Dignity</b><br><i>Tal Simmons, PhD*</i>                                          |

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| 10:15 AM – 10:30 AM | <b>A66</b> | <b>Mapping Medicolegal Disparities and Indigenizing Harm Reduction Strategies for Missing and Murdered Indigenous Persons in Idaho</b><br><i>Juliette Bedard, BA*</i> ; <i>Samantha H. Blatt, PhD</i> ; <i>Patricia N. Morales Lorenzo, BS</i> ;<br><i>Jake R. Shields, MS, BS</i> ; <i>Trace Miles</i> ; <i>Bailey Bates</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
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| 10:30 AM – 10:45 AM | <b>BREAK</b> |
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## Personal Identification Through Imaging and Radiography

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Moderator: Kathryn Baustian, PhD

Co-Moderator: Jordan Roberson, BS

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

## Advancements in Cranial Identification

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Moderator: Ellen Fricano, PhD

Co-Moderator: Kewal Krishan, PhD

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| 1:15 PM – 1:30 PM | <b>A72</b> | <b>Facial Photo-Anthropometry for the Exclusion of Candidates Under Non-Restrictive Photographic Conditions</b><br><i>Oscar Ibáñez Panizo, PhD*</i> ; <i>Pilar Navarro, BSc</i> ; <i>Valentino Lugli, BSc</i> ; <i>Andrea Valsecchi, PhD</i> ;<br><i>María A. Guativonza</i> ; <i>Verónica Martínez</i> ; <i>Guillermo Ramírez</i> ; <i>Rosario Guerra Martí</i> ;<br><i>Inmaculada Alemán, PhD</i> |
| 1:30 PM – 1:45 PM | <b>A73</b> | <b>Correlations of Facial Soft Tissue Thicknesses With Craniometric Dimensions to Improve Craniofacial Identification Estimates: Fact or Fiction?</b><br><i>Te Wai Pounamu Telená Hona, BSc*</i> ; <i>Carl Stephan, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                            |

# ANTHROPOLOGY

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| 1:45 PM – 2:00 PM | <b>A74</b> | <b>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)</b><br><i>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</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 2:00 PM – 2:15 PM | <b>A75</b> | <b>The Latest Advancements in Craniofacial Superimposition Using Artificial Intelligence</b><br><i>Oscar Ibáñez Panizo, PhD*; Praxedes Martinez, 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</i>                                                                                                                                                               |
| 2:15 PM – 2:30 PM |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Reconsidering Sex Estimation Methods

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Moderator: Carolyn Isaac, PhD

Co-Moderator: Christopher Goden, MA

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| 2:30 PM – 2:45 PM | <b>A76</b> | <b>Sex Estimation Methods in Forensic Anthropology: Current Practice and Trends</b><br><i>Alexandra R. Kiales, PhD*; Kate M. Lesciotto, JD, PhD</i>                                                          |
| 2:45 PM – 3:00 PM | <b>A77</b> | <b>A Test of the Applicability of Decision Trees for Sex Estimation Utilizing an Expanded Suite of Morphological Traits</b><br><i>Morgan J. Ferrell, MA*; John J. Schultz, PhD; Donovan M. Adams, PhD</i>    |
| 3:00 PM – 3:15 PM | <b>A78</b> | <b>An Exploration of the Subadult Pelvic Sex Estimation Method Using Pelvic Metrics and Geometric Morphometrics</b><br><i>Leah E. Auchter, MA*; Kyra Stull, PhD; Heather M. Garvin, PhD</i>                  |
| 3:15 PM – 3:30 PM | <b>A79</b> | <b>Sex Estimation From Mandibular Morphometry Using a Discriminant Analysis–CT Scan-Based Retrospective Study</b><br><i>Siddhartha Das, MBBS, MD*; Sunitha VC, MBBS, MD; Vasanth Lenin, MBBS</i>             |
| 3:30 PM – 3:45 PM | <b>A80</b> | <b>Increasing Transparency in Sex Estimation From the Skull by Monitoring Variation in Decision-Making Patterns</b><br><i>Nicole Mantl, MSc, MPhil*; Sherry Nakhaeizadeh, PhD; Ruth M. Morgan, MA, DPhil</i> |
| 3:45 PM – 4:00 PM | <b>A81</b> | <b>Combining Metric and Morphological Traits for Sex Estimation: A Pilot Study Using the Innominate</b><br><i>Kate M. Lesciotto, JD, PhD*; Alexandra R. Kiales, PhD; Michael Price</i>                       |
| 4:00 PM – 4:15 PM |            | <b>BREAK</b>                                                                                                                                                                                                 |

## Bone Chemistry and Isotopes

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Moderator: Tiffany Saul, PhD

Co-Moderator: Helen Brandt-Litavec, MS

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|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4:15 PM – 4:30 PM | <b>A82</b> | <b>The Impact of Chemical Maceration on Elemental Concentrations and <math>^{87}\text{Sr}/^{86}\text{Sr}</math> Values in Bone</b><br><i>Julianne J. Sarancha, MS*; Gwyneth Gordon, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
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# ANTHROPOLOGY

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| 4:30 PM – 4:45 PM | <b>A83</b> | <b>The Use of Multi-Isotopes for Geoprofiling Unidentified Decedents to Assist Law Enforcement Agencies in the United States</b><br><i>Liotta N. Dowdy, BS, MA*; Gennifer M. Goad, BA, MA; Anthony Menicucci, PhD; George Kamenov, PhD; Erin H. Kimmerle, PhD</i> |
| 4:45 PM – 5:00 PM | <b>A84</b> | <b>Origins and Isoscapes: A Reassessment of Oxygen and Strontium Isotopic Data for Human Identifications in North America</b><br><i>Kirsten A. Verostick, PhD*; Chris Stantis; Alejandro Serna, PhD; Gabriel Bowen, PhD</i>                                       |
| 5:00 PM – 5:15 PM | <b>A85</b> | <b>Isotopic Taphonomy: A Critical Review of the Effects of Diagenesis on Human Tissues Used for Stable Isotope Analysis</b><br><i>Shelby Hard, BA*</i>                                                                                                            |
| 5:15 PM – 5:30 PM | <b>A86</b> | <b>The Impacts of Chronic Opioid Exposure on Bone Biomechanical Parameters</b><br><i>Sydney Q. Chizmeshya, BA*; Janna M. Andronowski, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                        |

## 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

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|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | <b>A87</b> | <b>The Right to the Truth: A Multimodal Investigation of Mass Graves and an Analysis of Commingled Remains for Conflict Resolution in Humanitarian Forensics</b><br><i>Xenia Paula Kyriakou, PhD*; Nicholas V. Passalacqua, PhD; Matthieu Baudelet, PhD</i>                                    |
| 1:15 PM – 1:30 PM | <b>A88</b> | <b>The Use of Computational Methods in Assessing Legacy Databases of Commingled Remains and Reconstructing Stratigraphic Relationships</b><br><i>Chris Mavromatis, PhD*; Xenia Paula Kyriakou, PhD</i>                                                                                         |
| 1:30 PM – 1:45 PM | <b>A89</b> | <b>A Case From “EL TUBO”: An Analysis of Commingled and Highly Fragmented Skeletal Remains Recovered From an Abandoned Water Exploration Well in Northeastern Mexico</b><br><i>Nicole Lambacher*; Caterina Raffone; Benito Ramos-González; Sandra Sostaric; Francisco Etxeberria Gabilondo</i> |
| 1:45 PM – 2:00 PM | <b>A90</b> | <b>The Reassociation of Disparate Elements at a Human Decomposition Facility</b><br><i>Rebecca L. George, PhD*; Reagan Baechele, BS; Autumn J. Hall</i>                                                                                                                                        |
| 2:00 PM – 2:15 PM | <b>A91</b> | <b>De-Commingling the Past—When an Attempt to Resolve Misidentifications Results in Setbacks: The Tihovici Case</b><br><i>Sandra Sostaric*; Bojana Tomasevic; Samra Terzic; Almir Olovic; Beisa Talic</i>                                                                                      |
| 2:15 PM – 2:30 PM | <b>A92</b> | <b>Matching Antimeres: Prospects and Limitations of Statistical Methods for the Reassociation of Commingled Left and Right Humeri</b><br><i>Erica Baer, PhD, MS*; Xenia Paula Kyriakou, PhD</i>                                                                                                |
| 2:30 PM – 2:45 PM | <b>A93</b> | <b>The Chemical Reassociation of Commingled Remains Via Laser-Induced Breakdown Spectroscopy</b><br><i>Kristen Livingston, BS*; Katie Zejdlik, PhD; Jonathan Bethard, PhD; Matthieu Baudelet, PhD</i>                                                                                          |
| 2:45 PM – 3:00 PM | <b>A94</b> | <b>Don’t Forget About ME: How Material Evidence Can Inform (or Complicate) Commingling From the Battle of Tarawa</b><br><i>Allison M. Campo, MA; Rylan Tegtmeyer Hawke, PhD*</i>                                                                                                               |

# ANTHROPOLOGY

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 WITHDRAWN.**

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*

4:00 PM – 4:15 PM

**A98 The Role of Starvation in the Underestimation of Living Stature From Skeletal Remains**  
*Maryann Hobbs\**; *Rylan Tegtmeier Hawke, PhD*

4:15 PM – 4:30 PM

**A99 Mass Graves: An Analysis of Injuries and Causes of Death**  
*Nermin Sarajlic, MD, PhD\**

4:30 PM – 5:00 PM

**QUESTIONS AND ANSWERS**

## 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\**

11:30 AM – 1:00 PM

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

11:30 AM – 1:00 PM

**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*

11:30 AM – 1:00 PM

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

11:30 AM – 1:00 PM

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

11:30 AM – 1:00 PM

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

11:30 AM – 1:00 PM

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

# ANTHROPOLOGY

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| 11:30 AM – 1:00 PM | <b>A107</b> | <b>An Age-at-Death Estimation From Pubic Bone Mineral Density on Postmortem CTs</b><br><i>Eulalie Pefferkorn*</i> ; <i>Fabrice Dedouit, MD, PhD</i> ; <i>Agathe Bascou, MD</i> ; <i>Pauline Saint Martin, PhD</i> ; <i>Norbert Telmon, MD, PhD</i> ; <i>Frederic Savall, MD, PhD</i>                              |
| 11:30 AM – 1:00 PM | <b>A108</b> | <b>Decoding Age-at-Death With DNA Methyloomics: A Cutting-Edge Approach for Forensic Analysis of Skeletal Remains</b><br><i>Luke William Gent, BSc*</i> ; <i>Noemi Procopio, PhD</i> ; <i>Edward Schwalbe</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                      |
| 11:30 AM – 1:00 PM | <b>A109</b> | <b>Intra-Skeletal Variation in Lower Limb Microstructure for Histological Age Estimation</b><br><i>Victoria M. Dominguez, PhD*</i> ; <i>Bailey A.G. Colohan</i>                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>A110</b> | <b>Introducing OA-TA: A New Tool for Adult Age-at-Death Estimation Using Osteoarthritis of the Synovial Joints</b><br><i>Michala K. Stock, PhD*</i> ; <i>Ariana N. Strasheim, MA, BA</i> ; <i>Allysha P. Winburn, PhD</i>                                                                                         |
| 11:30 AM – 1:00 PM | <b>A111</b> | <b>Validating Population Affinity Method Platforms for Macromorphoscopic Traits in Specific 20th-Century Contexts</b><br><i>Cortney N. Hulse, PhD*</i> ; <i>Amanda N. Friend, PhD</i> ; <i>Amanda R. Hale, MA</i> ; <i>Abigail K. Kindler, MA</i> ; <i>Rebecca J. Taylor, PhD</i>                                 |
| 11:30 AM – 1:00 PM | <b>A112</b> | <b>A Comparison of Ancestry-Specific Versus Ancestry-Independent Stature Estimation</b><br><i>Rylan Tegtmeyer Hawke, PhD*</i> ; <i>Laura E. Cirillo, PhD</i> ; <i>Katie Whitmore, PhD</i> ; <i>Lara E. McCormick, PhD</i> ; <i>Abigail Kindler, MA</i> ; <i>Emily S. Tarbet Hust, MA</i>                          |
| 11:30 AM – 1:00 PM | <b>A113</b> | <b>Evaluating the Prevalence of Torus Mandibularis and Torus Palatinus in Relation to Ancestry, Sex, and Age in a Modern Skeletal Sample</b><br><i>Alex F. Wong, MS, BA*</i> ; <i>Amandine Eriksen, PhD</i> ; <i>Stephen Nawrocki, PhD</i>                                                                        |
| 11:30 AM – 1:00 PM | <b>A114</b> | <b>How Do Agencies Use Biological Profile Data? A Pilot Study Investigating Stakeholder Engagement With Forensic Anthropological Estimates</b><br><i>Samantha M. McCrane, PhD*</i> ; <i>Allysha P. Winburn, PhD</i> ; <i>Amanda N. Friend, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation) |
| 11:30 AM – 1:00 PM | <b>A115</b> | <b>Assessing the Reliability of the DSP2 Software for Skeletal Sex Assessment in a Modern Italian Reference Collection From Syracuse, Sicily</b><br><i>Henrietta Vita*</i> ; <i>Constantine Eliopoulos, PhD</i> ; <i>Matteo Borrini, PhD, MS*</i>                                                                 |
| 11:30 AM – 1:00 PM | <b>A116</b> | <b>Sex Estimation of Modern Greek-Cypriots Utilizing Measurements of the Calcaneus and Talus</b><br><i>Anelis Diaz, MA, BS*</i> ; <i>Georgia Hennessy*</i> ; <i>Erica Baer, PhD, MS</i> ; <i>Xenia Paula Kyriakou, PhD</i>                                                                                        |
| 11:30 AM – 1:00 PM | <b>A117</b> | <b>Sexual Dimorphism in the Human Mandible: The Application of 3D Statistical Shape Modeling</b><br><i>Yu-Young Kim, MS*</i> ; <i>Kang-Woo Lee, PhD</i> ; <i>Kyung-Seok Hu, DDS, PhD</i>                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>A118</b> | <b>The Ontogenetic Development of the Preauricular Sulcus and Its Utility in Estimating Sex in Children and Young Adults With Considerations for Pregnancy and Parturition</b><br><i>Stephanie J. Cole, PhD*</i> ; <i>Marin Pilloud, PhD</i> ; <i>Kyra Stull, PhD</i>                                             |
| 11:30 AM – 1:00 PM | <b>A119</b> | <b>The Utility of the Maxillary Sinus in Estimating Biological Sex in a Modern American Population</b><br><i>Abigail Elaine Houkes, MA*</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                        |
| 11:30 AM – 1:00 PM | <b>A120</b> | <b>Translating Results: Accessing Accuracy Within Sex Estimation Methods From the Biological Profile</b><br><i>McKenzie Macon, BAS*</i> ; <i>Cris E. Hughes, PhD</i>                                                                                                                                              |

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# ANTHROPOLOGY

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| 11:30 AM – 1:00 PM | <b>A121</b> | <b>Creating Continuity: The Proper Handling of Unprovenanced, and Unidentified, Legacy Forensic Cases and Prevention of Future Mishandling</b><br><i>Chelsey A. Juarez, PhD*</i> ; <i>Alison Galloway, PhD</i>                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>A122</b> | <b>Identification Trends in Forensic Anthropology Cases at the New Mexico Office of the Medical Investigator</b><br><i>Nicollette S. Appel, MS*</i> ; <i>Cris E. Hughes, PhD</i> ; <i>Paige Lynch, MS</i>                                                                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>A123</b> | <b>Forensic Anthropology Casework and Outreach: 50 Years of Operational Trends for Chico State's Human Identification Laboratory</b><br><i>Colleen Milligan, PhD*</i> ; <i>Eric J. Bartelink, PhD</i> ; <i>Shannon Clinkinbeard, MA</i> ; <i>Cheyenne D. Collins, MA</i> ; <i>Ashley Kendell, PhD</i> ; <i>Taylor Lambrigger, MA</i> ; <i>P. Willey, PhD</i>                      |
| 11:30 AM – 1:00 PM | <b>A124</b> | <b>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)</b><br><i>Emilie Wiedenmeyer, MA*</i> ; <i>Theresa M. De Cree, MS, BA</i> ; <i>Michelle D. Hamilton, PhD</i>                                                                |
| 11:30 AM – 1:00 PM | <b>A125</b> | <b>A Comparison of Forensic Anthropology Casework Across Two Urban, Midwest Medical Examiner Offices, 2013–2021</b><br><i>Erin B. Waxenbaum, PhD*</i> ; <i>Lindsay H. Trammell, PhD</i> ; <i>Anne Grauer, PhD</i>                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>A126</b> | <b>Introducing the Forensic Science Research and Training Laboratory (FSRTL), a New Forensic Anthropology Research Facility at George Mason University</b><br><i>An-Di Yim, PhD*</i> ; <i>Emily D. Rancourt, MS</i> ; <i>Joseph A. DiZinno, DDS</i> ; <i>Brian Eckenrode, PhD</i> ; <i>Kimberly Rule, MS</i> ; <i>Christopher Durac, MS, BS</i> ; <i>Mary E. O'Toole, PhD, MA</i> |
| 11:30 AM – 1:00 PM | <b>A127</b> | <b>Stakeholder Perspectives and End-of-Life Planning: The Future for Body Farms, Donation Programs, and Student Development</b><br><i>Natalie S. Wise, BA*</i> ; <i>Erin H. Kimmerle, PhD</i>                                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>A128</b> | <b>The Forensic Taphonomy Education and Research Facility: An Interdisciplinary Educational and Professional Resource</b><br><i>Sophia I. Reck, MA*</i> ; <i>Ginesse A. Listi, PhD</i>                                                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>A129</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                  |

## Rexamining the Biological Profile

Moderator: Heather Walsh-Haney, PhD

Co-Moderator: Anthony Lanfranchi, MS

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| 8:45 AM – 9:00 AM | <b>A130</b> | <b>Considerations for Age Estimation Accuracy: Method-Derived Outcomes and Practitioner Interpretations</b><br><i>Cris E. Hughes, PhD*</i> ; <i>Chelsey A. Juarez, PhD</i> ; <i>An-Di Yim, PhD</i>                                                                                                         |
| 9:00 AM – 9:15 AM | <b>A131</b> | <b>A Regression-Based Machine Learning Framework for Adult Skeletal Age Estimation</b><br><i>Eugenia Cunha, PhD*</i> ; <i>David Navega, PhD</i>                                                                                                                                                            |
| 9:15 AM – 9:30 AM | <b>A132</b> | <b>Cranial Masculinization: How Age Progression Affects the Accuracy of Sex Estimations in Adults</b><br><i>Lyndsey Hornagold*</i> ; <i>Samantha Shipley, MS*</i> ; <i>Erin H. Kimmerle, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                              |
| 9:30 AM – 9:45 AM | <b>A133</b> | <b>Unaccompanied Minors Automatic Forensic Age Estimation (UMAFAE): Applying Artificial Intelligence-Based Methods to Estimate Legal Age in Undocumented Minors</b><br><i>Stefano De Luca</i> ; <i>Javier Venema Rodríguez, MSc</i> ; <i>Pablo Mesejo Santiago, PhD</i> ; <i>Oscar Ibáñez Panizo, PhD*</i> |

# ANTHROPOLOGY

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  
 (FSF Emerging Forensic Scientist Award Oral Presentation)

10:15 AM – 10:30 AM    **BREAK**

## 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 Suárez, PhD; Stella Martín 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. Clafflin; 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

# ANTHROPOLOGY

|                   |             |                                                                                                                                                                                                                                                       |
|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:00 PM – 2:15 PM | <b>A145</b> | <b>Unexpected Antemortem and Perimortem Rib Fractures in Infants Without Other Significant Injuries</b><br><i>Erin Chapman, PhD*</i> ; Katherine Maloney, MD; Tara Mahar, MD                                                                          |
| 2:15 PM – 2:30 PM | <b>A146</b> | <b>Whole Body Fracture Patterns From Blunt Force Trauma Vary Within Similar Experimental Loading Events</b><br><i>Amanda M. Agnew, PhD*</i> ; Angela L. Harden, PhD; Yun-Seok Kang, PhD; John H. Bolte, PhD, MSc                                      |
| 2:30 PM – 2:45 PM | <b>A147</b> | <b>Structural Violence in Orleans Parish, Louisiana: Implications for Forensic Anthropological Casework</b><br><i>Krista E. Bennett, MA*</i> ; Sophia I. Reck, MA; Ginesse A. Listi, PhD; Emily F. Michon, MA; Teresa V. Wilson, PhD                  |
| 2:45 PM – 3:00 PM | <b>A148</b> | <b>Skeletal Trauma in Suicide Cases (2017–2018) in Puerto Rico After Hurricane Maria</b><br><i>Gabriela I. Rios Santiago, MS*</i> ; Maria Teresa Ferreira, PhD; Sofia N. Wasterlain, PhD<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 3:00 PM – 3:15 PM |             | <b>BREAK</b>                                                                                                                                                                                                                                          |

## Human Rights and Global Perspectives in Forensic Anthropology

Moderator: Amanda Williams, PhD

Co-Moderator: Dayanira Lopez, MS

|                   |             |                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:15 PM – 3:30 PM | <b>A149</b> | <b>An Analysis and Reconstruction of Remains From a World War II Mass Grave in the Szpeġawski Forest, Poland</b><br><i>Joanna Wysocka, MSc*</i> ; Dawid Kobińska, PhD                                                                                                                                                                               |
| 3:30 PM – 3:45 PM | <b>A150</b> | <b>The Latin American Association of Forensic Anthropology (ALAF): 20 Years of Development</b><br><i>Luis Fondebrider, PhD*</i>                                                                                                                                                                                                                     |
| 3:45 PM – 4:00 PM | <b>A151</b> | <b>Missing Persons in Argentina: The Age Progression Technique to Support Non-Profit Organizations in the Search for the Lost</b><br><i>Laura Donato*</i> ; Luigi Tonino Marsella; Marcela Lerda; Michele Treglia; Rossana Cecchi, MD                                                                                                               |
| 4:00 PM – 4:15 PM | <b>A152</b> | <b>The Role of Forensic Anthropology in Long-Term Missing Persons Cases in Scotland</b><br><i>Catrina Davies, PhD, BSc*</i> ; Lucina Hackman, PhD; Helen Langstaff, PhD; Diana Swales, PhD                                                                                                                                                          |
| 4:15 PM – 4:30 PM | <b>A153</b> | <b>FORDISC® and AncesTrees: Limitations and Considerations for the Identification of Individuals From Central and South America</b><br><i>Hannah G. Messersmith, BSc*</i> ; Julieta Gómez García-Donas, JD, PhD                                                                                                                                     |
| 4:30 PM – 4:45 PM | <b>A154</b> | <b>The Forensic Border Coalition South Texas Cemetery Survey: Insights From a Forensic Science and Humanitarian Effort Addressing Unidentified Burials and Unidentified Remains</b><br><i>Kate Spradley, PhD*</i> ; Christine M. Kovic, PhD; Mercedes Doretti; Robin C. Reineke, PhD; Molly Miranker, PhD; Molly A. Kaplan, MA; Rachel Daniell, PhD |
| 4:45 PM – 5:00 PM | <b>A155</b> | <b>Shifting Routes: Expanding Migrant Decedent Identification Efforts in Texas</b><br><i>Molly A. Kaplan, MA*</i> ; Courtney C. Siegert, MA, PhD; Chloe P. McDaniel, MA; Ivanna Robledo, MA; Kate Spradley, PhD                                                                                                                                     |
| 5:00 PM – 5:15 PM | <b>A156</b> | <b>Necrosilence: GIS Visualizations of Migrant Mortality in South Texas, 2009–2020</b><br><i>Molly Miranker, PhD*</i> ; Alberto Giordano, PhD<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                                          |

# CRIMINALISTICS

## Wednesday

### Poster Session

|                    |            |                                                                                                                                                                                                                                                                                                                          |
|--------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>B1</b>  | <b>What's In It For Me (WIIFM)? Streamlining Sexual Assault Evidence From Collection to Analysis to Achieve the Best Outcome for the Survivor</b><br><i>Fernanda Henry, BSc, MSc*; Joy Quinlan, BSc; Valerie Mattimore Fuller, PhD, BS; Alier Compton, BSc</i>                                                           |
| 11:30 AM – 1:00 PM | <b>B2</b>  | <b>The Remains of the Crime: An Assessment of Body Fluid Identification Over Time</b><br><i>Francisco Medina Paz, PhD; Brandon L. Kuba, BS; Emily Kryvorutsky; M. Gabriela Roca, MSc, PhD*; Sara C. Zapico, PhD</i>                                                                                                      |
| 11:30 AM – 1:00 PM | <b>B3</b>  | <b>Dry Vacuum Recovery of DNA From Fabric</b><br><i>Emily Sam-Zee-Moi, BS*; Mechthild Prinz, MS, PhD</i>                                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>B4</b>  | <b>An Initial Investigation of the Applied Biosystems® SeqStudio™ Genetic Analyzer for Human Identification Purposes</b><br><i>Brayleigh Keefe, BS*; Megan Foley, MSFS; Nicole Novroski; Fabio Oldoni, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                               |
| 11:30 AM – 1:00 PM | <b>B5</b>  | <b>A Morphological and Genetic Characterization of the Psychoactive Species <i>Psilocybe Cubensis</i> From Forensic Samples</b><br><i>Ivana Horjan Zanki; Adela Makar, PhD; Andrea Ledić*</i>                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>B6</b>  | <b>The Persistence of Wearer DNA on Clothing After Laundering</b><br><i>Rachel Breitenstein, MS*; Shawn Montpetit, MS; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*</i>                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>B7</b>  | <b>A Multi-Species Reference Ladder Using Two PCR Multiplexes for the Rapid Identification of Most Domestic Animals for Forensic Purposes</b><br><i>Vallarie Ostenson, MS; Lindsey Kaufman, MS; DeEtta Mills, PhD*</i>                                                                                                   |
| 11:30 AM – 1:00 PM | <b>B8</b>  | <b>Advancing Semen Detection Techniques With Sperm Tracker STK® in Real Case Scenarios and Diverse Environments</b><br><i>Monica Omedei, PhD*; Selena Cisana, PhD; Aurora Desogus; Giorgia Ferrero; Florian Tharin; Paolo Garofano, PhD; Eugenio Alladio (FSF Emerging Forensic Scientist Award Poster Presentation)</i> |
| 11:30 AM – 1:00 PM | <b>B9</b>  | <b>Into the "Sexome": Genital Microbiome Transfer and Applications</b><br><i>Julia Wang, BS, MS*; Rachel Houston, PhD; Sheree R. Hughes, BSc, PhD; Brendan Chapman; Ruby Dixon, BS (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                       |
| 11:30 AM – 1:00 PM | <b>B10</b> | <b>The Adaptation, Optimization, and Validation of a Semi-Automated DNase I-Based Differential Extraction Procedure on the Beckman Coulter Biomek NX<sup>P</sup> Automation Workstation</b><br><i>Susan A. Greenspoon, PhD*; William Eggleston, PhD; Cathryn Shannon, BS, MS</i>                                         |
| 11:30 AM – 1:00 PM | <b>B11</b> | <b>From Tecan to Hamilton: Material Modification of Applied Biosystems™ PrepFiler™ Automated Extraction</b><br><i>Cristina L. Servidio, MFS*; Rachel H. Oefelein, MSc; Brittany Stirmell, MSFS</i>                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>B12</b> | <b>An Evaluation of the Effectiveness of Flow Cytometry in Sperm Testing in Mixed Semen Specimen</b><br><i>Fang Chun Chung*; Chun-Yen Lin; Kuan-Miao Yeh; Yeh-Lin Lu; Chun Changou</i>                                                                                                                                   |

# CRIMINALISTICS

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

# CRIMINALISTICS

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| 11:30 AM – 1:00 PM | <b>B28</b> | <b>A Workflow for the Rapid Analysis of Trace Drug Residues Collected From Used Paraphernalia</b><br><i>Meghan G. Appley, PhD*</i> ; Elizabeth Robinson, MS; Edward Sisco, PhD                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>B29</b> | <b>A Homemade Bomb Mistaken for a Terroristic Attack: A Variety of Forensic Analyses Can Help Substantiate the Investigations</b><br><i>Irene Pradelle, MD*</i> ; Michele Carpinteri, MD; Laura Camilla Gasparini, MD; Luca Diani, MD; Giada Rovito, MD; Margherita Neri, MD PhD                                                                                 |
| 11:30 AM – 1:00 PM | <b>B30</b> | <b>Hidden Traces: An Alternative Analytical Scheme for Seized Drug Analysis</b><br><i>J. Tyler Davidson, PhD*</i> ; Alleigh N. Couch, BS                                                                                                                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>B31</b> | <b>Matricide: When Psycho-Social Fragilities Lead to Murder</b><br><i>Laura Camilla Gasparini, MD*</i> ; Michele Carpinteri, MD; Giada Rovito, MD; Luca Diani, MD; Irene Pradelle, MD; Matteo Fabbri, PhD, MSc; Matteo Marti; Rosa M. Gaudio, MD, PhD; Raffaella Marino, MD; Letizia Alfieri, MD; Margherita Neri, MD, PhD                                       |
| 11:30 AM – 1:00 PM | <b>B32</b> | <b>Quantitation of Lysergic Acid Diethylamide (LSD) Using HPTLC</b><br><i>Tori Schaffer, BS, MSFS*</i> ; Sandra E. Rodriguez-Cruz, PhD; Jeanne R. Berk, PhD, LLB; Thomas A. Brettell, MS, PhD                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>B33</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>B34</b> | <b>The Odor Behind a Shot: Chemical Characterization of Volatiles From Ammunition</b><br><i>Salem Danielle Smith*</i> ; Paola A. Prada-Tiedemann, PhD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>B56</b> | <b>Toxic Adulterant Prevalence in the United States Illicit Drug Supply: Geographical Trends and Raising Awareness Regarding Their Dangers to Promote Public Health</b><br><i>Mia Borrelli, MS, BS*</i> ; Melissa F. Hehir; Trisha Conti; Ryan Farrell; Nicole Lattanzio, MSFS; Sarah A. Shuda, MSFS; Amanda L.A. Mohr, MS; Thom Browne, MA; Barry K. Logan, PhD |

## Thursday

### Poster Session

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|--------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>B23</b> | <b>The Effect of Solid Copper Bullets on Barrel Rifling Characteristics</b><br><i>Natali Hassett, BS*</i> ; Eric Law, PhD                                                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>B35</b> | <b>An Analysis of Improved Methods for the Genetic Identification of Cremated Skeletal Remains</b><br><i>Kadir Dastan*</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                         |
| 11:30 AM – 1:00 PM | <b>B36</b> | <b>An Examination of the EZ2 Connect Fx for Extra-Large Volume DNA Extraction and Purification From Skeletal Samples</b><br><i>Jennifer L. Snedeker, BS*</i> ; Sheree R. Hughes, BSc, PhD; Rachel Houston, PhD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)     |
| 11:30 AM – 1:00 PM | <b>B37</b> | <b>The Development of a Custom qPCR Multiplex to Quantify Human and Microbial DNA</b><br><i>Miriam Foster*</i> ; Mitchell M. Holland, PhD; Jennifer McElhoo<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                        |
| 11:30 AM – 1:00 PM | <b>B38</b> | <b>The Reassociation of Highly Degraded Human Remains Found in the East Marshall Street Well Using Insertion/Null Genotyping</b><br><i>Sierra Laveroni*</i> ; Andrea Malchow*; Daniela Frausto, MS; Michelle M. Woo, MS, BS; Baneshwar Singh, PhD; Filipa Simao; Tal Simmons, PhD |

# CRIMINALISTICS

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| 11:30 AM – 1:00 PM | <b>B39</b> | <b>An Overview of Cannabis Seizures and Methods for Distinguishing Between Cannabis and Hemp in Croatia</b><br><i>Slavena Cukrov Bezbradica, PhD; Lucija Barbarić, PhD; Kristina Jurković, PhD*;<br/> Adela Makar, PhD; Maja Jelena Čop, PhD; Andrea Ledić</i>                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>B40</b> | <b>An Efficient Alternative to the Conventional Bone Pulverization Step for Personal Identification in 11 Real Forensic Caseworks</b><br><i>Chiara Della Rocca, PhD*; Gavino Piras; Alessandro Mameli</i>                                                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>B41</b> | <b>Investigative Single Cell Genetics: Determining the Probability of a Genotype After Observing Single-Cell Data Enables Robust Database Searches Regardless of Mixture Complexity</b><br><i>Qhawe A. Bhembé, MS*; Nidhi Sheth, MS; Leah M. O'Donnell, BSc, MSc; Ken R. Duffy, PhD;<br/> Desmond S. Lun, PhD; Catherine M. Grgicak, PhD<br/> (FSF Emerging Forensic Scientist Award Poster Presentation)</i> |
| 11:30 AM – 1:00 PM | <b>B42</b> | <b>Locus Abundance Variation by ForenSeq™ DNA Signature Prep Kit Lot</b><br><i>Kim Eskey, MS, BS*; Kyleen Elwick, PhD; Sana Enke; Claire Levy; Marie Lovett; April Manzella, BA;<br/> Christina Scott, MS, BA; Rebecca S. Just, PhD</i>                                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>B43</b> | <b>Genotyping Strategies for Tissues Fixed With Various Embalming Fluids for Human Identification, Databasing, and Traceability</b><br><i>Cassidy Callaway*; Madeline Ashton, BSc; Natalia Czado, BS, MSFS; Sheree R. Hughes, BSc, PhD<br/> (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                                                   |
| 11:30 AM – 1:00 PM | <b>B44</b> | <b>The Development of a Facial Phenotype Prediction Method Using Korean 3D Craniofacial Images and SNPs</b><br><i>Won Joon Lee; Joon Yeol Ryu*; Hyobong Jang*; Eunseo Park; Eunsoon Shin; Sohee Cho, PhD;<br/> Jong Eun Lee; Soong Deok Lee, MD, PhD</i>                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>B45</b> | <b>The Development of Reagents, Software, and a Database for Kinship Determination in Missing Persons, Disaster Victims, and Human Rights Violation Cases</b><br><i>Gothami A. Padmabandu, MS*; Joana Antunes, PhD; Sarah M. Radecke; Michaela Russo;<br/> Erin McCarthy, BS; Juan Carlos Perez, BS; Kathryn M. Stephens, PhD</i>                                                                             |
| 11:30 AM – 1:00 PM | <b>B46</b> | <b>A 353-Plex Panel for Forensic Identification Based on Massively Parallel Sequencing Technology</b><br><i>Yingying Cheng*; Qiujuan Wang, PhD; Dong Li; Bowen Li; Shengjie Gao;<br/> Kunjie Pang, MS, BS; Xianhua Jiang; Hongqi Wang; Xiaosen Guo*</i>                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>B47</b> | <b>Differentiating Marijuana From Hemp Using an NGS Panel and Rapid Genotyping Assays Targeting Cannabinoid Synthase Genes</b><br><i>Ya-Chih (Jessica) Cheng, MS*; Rachel Houston, PhD<br/> (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>B48</b> | <b>Challenges of DNA Profiling After Firefighting Plane Crash: The Influence of Kerosene Biodegradation on Human Remains</b><br><i>Francesco Sessa, MS, PhD*; Martina Francaviglia, MD; Giuseppe Cocimano, MD;<br/> Salvatore Roccuzzo, MD</i>                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>B49</b> | <b>The Development of a Multiplex SNP Genotyping RT-PCR Kit for Screening of Non-Koreans</b><br><i>Seyoung Nam*; Si-Keun Lim; Yukyoung Sin<br/> (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>B50</b> | <b>The Utilization of a Single Nucleotide Variant (SNV) Panel for the Confirmation of Sample Identity in Two Clinical Genomics Applications</b><br><i>Mariana Voudouri, MD*; Donald Green, BS; Sophie Deharvengt; Joel Lefferts, PhD;<br/> Wahab A. Khan, PhD; Parth Shah, MD</i>                                                                                                                             |

# CRIMINALISTICS

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| 11:30 AM – 1:00 PM | <b>B51</b> | <b>Examining the Risk Associated With Qualitative Exclusions in Forensic DNA Casework</b><br><i>Samantha Orans Wandzek, MS*</i>                                                                                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>B52</b> | <b>STRBase Moving Forward</b><br><i>Lisa A. Borsuk*; Angela Lee; Peter Vallone, PhD</i>                                                                                                                                                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>B53</b> | <b>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</b><br><i>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</i> |
| 11:30 AM – 1:00 PM | <b>B54</b> | <b>A Longitudinal Study on the Odor Stability of Decomposition Simulated Training Aids Under Freezing Conditions</b><br><i>Jonathan Bateman Locke*; Andrea Medrano, MS, BS; Paola A. Prada-Tiedemann, MS, BS; Chris Holleyman</i>                                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>B55</b> | <b>A Pre-Concentrating Polymer Coating for Improved Detection of Fentanyl and Fentanyl Analogs</b><br><i>Galpayage Dona Thouli Lochana Jayawardana, BSc*; Lauryn DeGreeff, PhD; Ashley Fulton, PhD; Braden C. Giordano, PhD</i>                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>B57</b> | <b>An Analysis of Plant Fragments Using X-Ray Fluorescence Spectrometry and X-Ray Absorption Fine Structure Technique Utilizing Synchrotron Radiation</b><br><i>Suzuha Kurosugi*; Yoshinori Nishiwaki; Masanobu Mori</i>                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>B58</b> | <b>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</b><br><i>Keita Miyazaki, BA*; Yoshinori Nishiwaki; Masanobu Mori</i>                                                                                                           |
| 11:30 AM – 1:00 PM | <b>B59</b> | <b>The Application of the Expert Algorithm for Substance Identification (EASI) to the Mass Spectra of Various Bath Salts (Synthetic Cathinones)</b><br><i>Glen P. Jackson, PhD*; Alexandra I. Adeoye, MS; Jessica Orris, BS; Clarissa McQuain; Stephen P. Hokanson, BS</i>                                                                                                    |
| 11:30 AM – 1:00 PM | <b>B60</b> | <b>An Assessment of a Combined Field-Portable Raman Spectroscopy and Gas Chromatography/Mass Spectrometry Approach for the Analysis of Seized Drugs</b><br><i>Christina Chang, BS*; Geraldine Monjardez, PhD; J. Tyler Davidson, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                |
| 11:30 AM – 1:00 PM | <b>B61</b> | <b>An Assessment of Odorant Permeability for Canine Training Aid Mimics in Different Containers Utilizing HS/SPME-GC/MS</b><br><i>Kayla Hogan, BS*; Katherine Dias Castro, BS; Janet M. Crespo Cajigas, MS, BS; Lauryn DeGreeff, PhD; Kenneth G. Furton, PhD</i>                                                                                                              |
| 11:30 AM – 1:00 PM | <b>B62</b> | <b>Color, Monogram, and Physical Measurements of Illicitly Manufactured Fentanyl Tablet Exhibits Seized Along the United States Southwestern Border</b><br><i>Joshua William Kotchey, 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</i>                           |
| 11:30 AM – 1:00 PM | <b>B63</b> | <b>The Detection of Airborne Methamphetamine in Contaminated Properties and Vehicles Using Active Air Sampling With Liquid Chromatography/Mass Spectrometry (LC/MS)</b><br><i>Gemma L. Kerry*; Emma J. Kuhn, BSc, Jackie Wright, PhD; Kirstin E. Ross, PhD, BSc; Stewart Walker, PhD, BSc</i>                                                                                 |

# CRIMINALISTICS

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|--------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>B64</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>B65</b> | <b>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</b><br><i>Ting-Yu Huang, MS*; Jorn Yu, PhD</i>                                                                                                                                        |
| 11:30 AM – 1:00 PM | <b>B66</b> | <b>Enhanced Ignitable Liquid and Substrate Database Functionality for Improved Casework and Research</b><br><i>Michael E. Sigman, PhD*; Nikhil Prakash, MS*; Mary R. Williams, MSc; Larry Tang, PhD</i>                                                                                                                                                                           |
| 11:30 AM – 1:00 PM | <b>B67</b> | <b>An Estimation of Dyeing Methods From Wool Single Fibers by Nanobeam X-Ray Fluorescence Imaging Utilizing Synchrotron Radiation</b><br><i>Yoshinori Nishiwaki*</i>                                                                                                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>B68</b> | <b>How to Minimize the Presence of Drug Residues on the Exterior of Drug Evidence Packaging After Analysis</b><br><i>Elizabeth Robinson, MS*; Edward Sisco, PhD; Rebecca Mead, MS</i>                                                                                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>B69</b> | <b>The Identification and Classification of Major Cannabinoids Using Raman Microscopy, Chemometrics, and a Novel Artificial Intelligence Approach</b><br><i>John Hugo Laetsch, BS*; Jose Grijalva, MS; Ting-Yu Huang, MS; Patrick Buzzini, PhD; Jorn Yu, PhD; J. Tyler Davidson, PhD; Geraldine Monjardez, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation) |
| 11:30 AM – 1:00 PM | <b>B70</b> | <b>One Gunshot Is Not Enough: A Case of Suicide by Double Gunshot Wound to the Head and a Literature Review</b><br><i>Eleonora Mezzetti, MD*; Federica Spina, MD; Laura Panata, MD; Isabella Mercurio, MD; Massimo Lancia, MD; Marco Di Paolo, MD</i>                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>B71</b> | <b>The Optimization of Sample Preparation Procedures for the Determination of <math>\Delta^9</math>-THC and It's Isomers in Seized Cannabis Oils, Concentrates, and Vapes by LC-PDA</b><br><i>Walter B. Wilson, PhD*</i>                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>B72</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                  |

## Thursday—Session I

### Standards, Policies, and Surveys

Moderator: Amy Brodeur, MFS

|                   |            |                                                                                                                                                                           |
|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:45 AM – 9:00 AM | <b>B73</b> | <b>Standards Development Activities in Human Forensic Biology</b><br><i>Jillian Conte, PhD*</i>                                                                           |
| 9:00 AM – 9:15 AM | <b>B74</b> | <b>Human Factors in Forensic DNA Handbook Recommendations in Practice</b><br><i>Tiffany A. Roy, BS, JD, MSFS*; Sasha B. Colvin, BS*</i>                                   |
| 9:15 AM – 9:30 AM | <b>B75</b> | <b>WITHDRAWN</b>                                                                                                                                                          |
| 9:30 AM – 9:45 AM | <b>B76</b> | <b>Processing Gun Crimes in NYC: How the Department of Forensic Biology Was Able to Meet a 30-Day Turnaround Time</b><br><i>Craig O. O'Connor, PhD*; Katey Nori, MSFS</i> |

# CRIMINALISTICS

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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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:00 AM – 10:15 AM     **BREAK**

## Trace and Touch DNA

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Moderator: Robin Cotton, PhD

Co-Moderator: Kristy Kadesh, 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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

12:00 PM – 1:00 PM     **BREAK**

## Body Fluid ID

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Moderator: Charlotte Word, PhD

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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

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*

# CRIMINALISTICS

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|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:30 PM – 1:45 PM | <b>B87</b> | <b>A Comparative Analysis of Swabbing Solutions for Sexual Assault Evidence: The Direct Impact on Spermatozoa and DNA Recovery</b><br><i>Olivia Quinn Kassie, BS*</i> ; Sarah Seashols Williams, PhD; Laura Gaydosh Combs, PhD<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 1:45 PM – 2:00 PM | <b>B88</b> | <b>The Discovery of Additional Male-Specific Protein Markers in Semen: Potential Applications for the Processing of Sexual Assault Evidence</b><br><i>Glendon Parker, PhD*</i> ; Kyle Burk, MSc; Mirna Ghemrawi, PhD, MSFS                                                                  |
| 2:00 PM – 2:15 PM | <b>B89</b> | <b>A Portable Microfluidic System for Rapid Serological Analysis of Forensically Relevant Body Fluids</b><br><i>Taylor Grace Chambers, PhD*</i> ; 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 | <b>B90</b> | <b>To Test or Not to Test for Body Fluids: The Integration of Body Fluid Identification and Direct PCR in One Workflow</b><br><i>Sara C. Zapico, PhD*</i> ; Francisco Medina Paz, PhD; Christian Stadler, PhD; M. Gabriela Roca, MSc, PhD; Santina Castriciano, BS                          |
| 2:30 PM – 2:45 PM | <b>B91</b> | <b>The Development of a Novel Multiomic Assay for Biofluid Identification</b><br><i>Amy N. Brodeur, MFS*</i> ; Angela Proctor, PhD; David Korest, BS                                                                                                                                        |
| 2:45 PM – 3:00 PM | <b>B92</b> | <b>A Comparison of Traditional Serological Techniques and DNA Methylation for the Identification of Body Fluids</b><br><i>Mirna Ghemrawi, PhD, MSFS*</i> ; Justin Frye, MSFB; Lindsay Loughner Kotchey, MS; Leah Nangeroni, BS                                                              |
| 3:00 PM – 3:15 PM | <b>B93</b> | <b>Alternative Direct-to-Amplification Cell Lysis Techniques for Forensically Relevant Non-Sperm Cells</b><br><i>Rhea Arya*</i> ; Brittany C. Hudson; Tracey Dawson Green, PhD<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                 |
| 3:15 PM – 3:30 PM |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                |

## FIGG, Ancestry, Predictive Modeling

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Moderator: Baneshwar Singh, PhD

Co-Moderator: Amelia Bussell, MSFS

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|-------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:30 PM – 3:45 PM | <b>B94</b> | <b>Decoding the Ocular Region From DNA: Building Predictive Models in Forensic Contexts</b><br><i>Belen Navarro Lopez, MS*</i> ; Victoria Suarez-Ulloa, PhD; Ruben Martos-Fernandez, PhD; Miriam Baeta Bafalluy, PhD; Oscar Ibáñez Panizo, PhD; Rebeca Guerrero; Begoña Martínez Jarreta, MD; Susana Jimenez Moreno, MD; Marian M. de Pancorbo, PhD |
| 3:45 PM – 4:00 PM | <b>B95</b> | <b>Targeted SNP Typing for Forensic Genetic Genealogy Using Hybridization Capture</b><br><i>Rebecca S. Just, PhD*</i> ; Sana Enke; Karla Y. Garcia, PSM, BS; Rebecca Mitchell, PhD; Michelle P. Ackermann, MS                                                                                                                                       |
| 4:00 PM – 4:15 PM | <b>B96</b> | <b>Genetic Ancestry of the Unidentified Human Remains From the East Marshall Street Well</b><br><i>Filipa Simao*</i> ; Baneshwar Singh, PhD; Tal Simmons, PhD                                                                                                                                                                                       |
| 4:15 PM – 4:30 PM | <b>B97</b> | <b>Estimating the Return on Investment on Forensic Investigative Genetic Genealogy: Using the Golden State Killer and the University of Idaho Cases as Case Models</b><br><i>Ray A. Wickenheiser, DPS, MBA*</i> ; Rachel H. Oefelein, MSc; Swathi A. Kumar, PhD                                                                                     |

# CRIMINALISTICS

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|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4:30 PM – 4:45 PM | <b>B98</b> | <b>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</b><br><i>Sarah Cavanaugh, MSFS*; Madalyn Bowers, BS; Robert Bever, PhD; Jonathan Davoren, MSc</i> |
|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Thursday—Session II

### Standards Development and Related Activities Strengthening Forensic Science

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Moderator: Carmen Masters, MSFS

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|---------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM   | <b>B99</b>  | <b>Advances in Canine Science and the Implementation of National Standards</b><br><i>Kelvin J. Frank, PhD, MSFS*; Kenneth G. Furton, PhD</i>                                                                                                                                                                     |
| 8:45 AM – 9:00 AM   | <b>B100</b> | <b>Current and Future Standards Development Activities Related to the Analysis of Seized Drugs</b><br><i>Agnes D. Winokur, MS*</i>                                                                                                                                                                               |
| 9:00 AM – 9:15 AM   | <b>B101</b> | <b>Firearms and Toolmarks Standards and Best Practices: A Collaboration of the NIST OSAC and AAFS Standards Board</b><br><i>Robert M. Sanger, BA, JD*; Xiaoyu A. Zheng, MS</i>                                                                                                                                   |
| 9:15 AM – 9:30 AM   | <b>B102</b> | <b>OSAC Is Ten Years Old—What Will the Next Decade Bring?</b><br><i>Mark D. Stolorow, MS, MBA*; John Paul Jones, BS, MBA*</i>                                                                                                                                                                                    |
| 9:30 AM – 9:45 AM   | <b>B103</b> | <b>Results From an Interlaboratory Study to Evaluate Analytical Schemes in ASTM E2329—Standard Practice for Identification of Seized Drugs</b><br><i>Jeremy S. Triplett, MS, BS*; Michael J. Salyards, PhD, MFS; Sandra E. Rodriguez-Cruz, PhD; Jeremiah Morris, BS; Megan Grabenauer, PhD; Darryl Creel, MS</i> |
| 9:45 AM – 10:00 AM  | <b>B104</b> | <b>Standards Development Activities in Trace Materials</b><br><i>Celeste M. Grover, MSFS; Sandra Koch, PhD*</i>                                                                                                                                                                                                  |
| 10:00 AM – 10:15 AM | <b>B105</b> | <b>Standards Development Activities Related to Friction Ridge Examination</b><br><i>Heidi Eldridge, PhD, MS*; Henry Swofford, PhD*</i>                                                                                                                                                                           |
| 10:15 AM – 10:30 AM | <b>B106</b> | <b>Standards Development Activities Related to Ignitable Liquids, Explosives, and Gunshot Residue</b><br><i>Brenda B. Christy, MS*</i>                                                                                                                                                                           |
| 10:30 AM – 10:45 AM |             | <b>BREAK</b>                                                                                                                                                                                                                                                                                                     |

### Forensic Science Principles

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Moderator: Thaddeus Mostowtt, PhD

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|---------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:45 AM – 11:00 AM | <b>B107</b> | <b>A 2024 Update From the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG)</b><br><i>Jaclyn Iera*</i>                                                                         |
| 11:00 AM – 11:15 AM | <b>B108</b> | <b>The Forensic Science Initiative (FSI): A Pathway to College and STEM Education</b><br><i>David Fisher, MS*; Barbara Elder Weller, EdD*; Kevin D. Belfield, PhD; Jacqueline L. Cusack, EdD</i> |

# CRIMINALISTICS

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|---------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:15 AM – 11:30 AM | <b>B109</b> | <b>What Is the Probability That a True Match Will Appear in the Top K Correlations After a Database Search?</b><br><i>Alicia Laura Carriquiry, PhD*</i> ; Heike Hofmann, PhD; Blanca I. Parker, BS; Cathryn Barbour, BS                                                      |
| 11:30 AM – 11:45 AM | <b>B110</b> | <b>The European Network of Forensic Science Institutes (ENFSI) Guideline for the Calculation of Measurement Uncertainty in Quantitative Forensic Investigation</b><br><i>Ivo Alberink, PhD*</i> ; Rosario García-Repetto, PhD; Maria Luisa Soria Sánchez, PhD; Jos Tóth, BSc |
| 11:45 AM – 1:00 PM  |             | <b>BREAK</b>                                                                                                                                                                                                                                                                 |

## Fire Debris and Explosives

Moderator: Tiffany Rodriguez, MS

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|-------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | <b>B111</b> | <b>A Comparison of Computational and Laboratory-Generated Fire Debris Data</b><br><i>Larry Tang, PhD*</i> ; Mary R. Williams, MSc; Michael E. Sigman, PhD                                                                                                     |
| 1:15 PM – 1:30 PM | <b>B112</b> | <b>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</b><br><i>Kelsey R. Winters, MSFS*</i> ; Brenda B. Christy, MS     |
| 1:30 PM – 1:45 PM | <b>B113</b> | <b>An Evaluation of Headspace Solid Phase Microextraction of Diesel Fuel From Cotton Swabs for Forensic Analysis</b><br><i>Ting-Yu Huang, MS*</i> ; Jorn Yu, PhD                                                                                              |
| 1:45 PM – 2:00 PM | <b>B114</b> | <b>An Evaluation of Tape for the Collection of Ignitable Liquid Residues From Non-Porous and Porous Surfaces</b><br><i>Laird Jarrett*</i> ; Cynthia J. Kaeser Tran                                                                                            |
| 2:00 PM – 2:15 PM | <b>B115</b> | <b>Expert and AI Opinions: Machine-Assisted Analysis of Fire Debris</b><br><i>Michael E. Sigman, PhD*</i> ; Mary R. Williams, MSc; Frances A. Whitehead, MS                                                                                                   |
| 2:15 PM – 2:30 PM | <b>B116</b> | <b>Investigating the Capability of DART®-MS for the Analysis of Common Homemade Explosives</b><br><i>Jared Estevanes, BS*</i> ; J. Tyler Davidson, PhD; Geraldine Monjardez, PhD; Alleigh Couch, BS (FSF Emerging Forensic Scientist Award Oral Presentation) |
| 2:30 PM – 3:00 PM |             | <b>BREAK</b>                                                                                                                                                                                                                                                  |

## Drugs

Moderator: Beth Saucier Goodspeed, MS

Co-Moderator: Stephanie Armas, MS

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|-------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:00 PM – 3:15 PM | <b>B117</b> | <b>Combining Surface-Enhanced Raman Spectroscopy (SERS) and Paper Spray-Mass Spectrometry (PS-MS) for Illicit Drug Detection and Identification</b><br><i>Sevde Dogruer Erkok, MSc; Roxanne Gallois; Leon Leegwater; Pascal Camoiras Gonzalez, MSc; Arian van Asten, PhD*</i> ; Bruce R. McCord, PhD |
| 3:15 PM – 3:30 PM | <b>B118</b> | <b>Evaluating the Sensitivity, Stability, and Cross-Reactivity of Commercial Fentanyl Immunoassay Test Strips</b><br><i>Sandra E. Rodriguez-Cruz, PhD*</i>                                                                                                                                           |
| 3:30 PM – 3:45 PM | <b>B119</b> | <b>Exploring Evidence of Common Origin of Recreational Drug Exhibits by GC/MS</b><br><i>Joshua S. DeBord, PhD*</i> ; Barry K. Logan, PhD; Alex J. Krotulski, PhD                                                                                                                                     |

# CRIMINALISTICS

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|-------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:45 PM – 4:00 PM | <b>B120</b> | <b>GC Derivative VUV Spectroscopy of JWH-018 Positional Isomers and Select Synthetic Cannabinoid Diastereomers</b><br><i>Annika Dombrowski, BS*; Ira Saul Lurie, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                          |
| 4:00 PM – 4:15 PM | <b>B121</b> | <b>The Effect of Spectral Intensity on Mass Spectral Discrimination of Fentanyl Positional Isomers</b><br><i>Isaac C. Willis, BS*; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                         |
| 4:15 PM – 4:30 PM | <b>B122</b> | <b>The Classification of Cannabinoids Using Mass Spectral Data for the Identification of Novel Synthetic Cannabinoids</b><br><i>Kristopher Charles Evans-Newman, AAS*; Nuwan T. Perera, PhD; Garion Schneider</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 4:30 PM – 4:45 PM | <b>B123</b> | <b>A Qualitative and Quantitative Analysis of Particulate Spread During Simulated Illicit Drug Manufacturing: Implications for Collection of Evidence and Crime Scene Safety</b><br><i>Edward Sisco, PhD*; Matthew Staymates, MS; Luis E. Arroyo, PhD</i>                      |

## Friday—Session I

### Challenging Samples

Moderator: Sheree Hughes, PhD

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|---------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>B124</b> | <b>Streamlining the Extraction of Challenging Samples Using the HID NIMBUS® Presto</b><br><i>Kayli Carrillo, BS*; Jennifer Snedeker, BS; Natalia Czado, BS, MSFS; Sheree R. Hughes, BSc, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                              |
| 9:15 AM – 9:30 AM   | <b>B125</b> | <b>The Effects of Oily Contaminants on DNA Extraction Efficiency Using DNA IQ™</b><br><i>Elizabeth Grace Gillece, BS*; Susan A. Greenspoon, PhD; William Eggleston, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                   |
| 9:30 AM – 9:45 AM   | <b>B126</b> | <b>The Development of a Method for Complete Collagenase I Digestion of <i>Bos Taurus</i> Bone Samples</b><br><i>Reilly Elizabeth Price, BA*; Ciara Rhodes, BS; Sarah Seashols Williams, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                               |
| 9:45 AM – 10:00 AM  | <b>B127</b> | <b>A Simple Tooth Preparation Method for the Applied Biosystems® RapidHIT™ ID Instrument</b><br><i>Morgan Elizabeth Eaton, BS*; Shane Woolf, MSFS, PhD; Samyuktha Pemmasani; Tracey Dawson Green, PhD</i>                                                                                                                                  |
| 10:00 AM – 10:15 AM | <b>B128</b> | <b>The Application of Ancient DNA Methodologies to Badly Burned Forensic Samples</b><br><i>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</i> |
| 10:15 AM – 10:30 AM | <b>B129</b> | <b>A DNA Analysis of Degraded Skeletal Remains Obtained From the Petrous Bone, Tooth, Femur, Tibia, and Humerus: A Comparison Study</b><br><i>Kadir Dastan*</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                               |
| 10:30 AM – 10:45 AM |             | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                               |

# CRIMINALISTICS

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## Probabilistic Genotyping

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Moderator: Kelly Knight, MS

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| 10:45 AM – 11:00 AM | <b>B130</b> | <b>Comparing Likelihood Ratios of Degraded DNA Mixture Profiles Using DNA-View® Mixture Solution™</b><br><i>Cameron Filipe, MSFS, BSFS*; Charles H. Brenner, PhD; Robin W. Cotton, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 11:00 AM – 11:15 AM | <b>B131</b> | <b>A Picture Is Worth 10,000 LR: The Evaluation and Implementation of Tools to Improve Interpretation and Reporting of Mixtures Using Probabilistic Genotyping</b><br><i>Tim Kalafut, PhD*; Michael Coble, PhD</i>                                      |
| 11:15 AM – 11:30 AM | <b>B132</b> | <b>A Comparison of the Two Most Widely Used Probabilistic Genotyping Systems Supports Accuracy and Concordance</b><br><i>Susan A. Greenspoon, PhD*; Brad Jenkins, BA, MS; Lisa Schiermeier-Wood, BS, MS</i>                                             |
| 11:30 AM – 11:45 AM | <b>B133</b> | <b>Beyond STRs: A Snippet Into the Challenges of Interpreting iiSNPs</b><br><i>Kevin Cheng, PhD, MSc*; Jo-Anne Bright, PhD</i>                                                                                                                          |
| 11:45 AM – 1:00 PM  |             | <b>BREAK</b>                                                                                                                                                                                                                                            |

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## Next Generation Sequencing

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Moderator: Pamela Marshall, PhD

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| 1:00 PM – 1:15 PM | <b>B134</b> | <b>An Evaluation of the FORCE Panel on Alternative Reference Materials</b><br><i>Sophie S. Lee, BS*; Lindsay Loughner Kotchey, MS; Leah Nangeroni, BS;</i><br><i>Kimberly Sturk Andreaggi, PhD; Charla Marshall, PhD; Mirna Ghemrawi, PhD, MSFS</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                    |
| 1:15 PM – 1:30 PM | <b>B135</b> | <b>Variant Allele Characterization in STR Markers Using Next Generation Sequencing</b><br><i>Becky Steffen, MS*; Lauren Mullen, BS; Grace M. Finch; Katherine Gettings, PhD;</i><br><i>Kevin Kiesler, MS</i>                                                                                                                                                                                        |
| 1:30 PM – 1:45 PM | <b>B136</b> | <b>Streamlining Degraded Sample Processing in Forensic Laboratories: Developing a Decision Tree for Capillary Electrophoresis and Next Generation Sequencing Platforms</b><br><i>Rachel Houston, PhD*; Natalia Czado, BS, MSFS; Damani Johnson, BS;</i><br><i>Lucio Avellaneda, BS; Cesar E. Cantu, BS; Sheree R. Hughes, BSc, PhD</i>                                                              |
| 1:45 PM – 2:00 PM | <b>B137</b> | <b>Maximum Recovery of DNA From Degraded Remains</b><br><i>Erin M. Rawls, BS*; Matthew V. Emery, PhD; Amber Coffman, BS; Stevie Winingear, BS, MS;</i><br><i>Amanda Wissler, PhD; Katelyn L. Bolhofner, PhD; Jane E. Buikstra, PhD;</i><br><i>Laura C. Fulginiti, PhD; Adam B. Rohrlach, PhD; Cody E. Parker, PhD; Anne Stone, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 2:00 PM – 2:15 PM | <b>B138</b> | <b>An Assessment and Validation of the IDseek® mYSTR Reverse Complement PCR Technology for Y-Chromosomal STR Profiling Utilizing the MiSeq® FGx System</b><br><i>Lindsay Loughner Kotchey, MS*; Brian Young, PhD; Leah Nangeroni, BS;</i><br><i>Mirna Ghemrawi, PhD, MSFS</i>                                                                                                                       |
| 2:15 PM – 2:30 PM | <b>B139</b> | <b>Visualizing Sequencing Artifacts in ForenSeq™ NGS Data</b><br><i>Yao-Yuan Liu*; Kevin Cheng, PhD, MSc; Jo-Anne Bright, PhD</i>                                                                                                                                                                                                                                                                   |

# CRIMINALISTICS

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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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:00 PM – 3:15 PM      **BREAK**

## DNA Potpourri

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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, MS\**; *Bruce R. McCord, PhD*

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 Squazzi, 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*  
(FSF Emerging Forensic Scientist Award Oral Presentation)

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*

# CRIMINALISTICS

## Friday—Session II

### Crime Scene and GSR

Moderator: Kathryn Chabaud, PhD

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|---------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>B148</b> | <b>Proactive Crime Scene Response Improves Criminal Investigations</b><br><i>Ray A. Wickenheiser, DPS, MBA*</i>                                                                                                                                                                                                    |
| 9:15 AM – 9:30 AM   | <b>B149</b> | <b>An Interagency Study of Scene Investigation Using Virtual Reality (VR) Tools</b><br><i>Jaclynn McKay, BS; Kelly Keyes, BS*; John H. Grassel, MS; Edward Hill, BS; Nicholas Thomas, PhD, MPH</i>                                                                                                                 |
| 9:30 AM – 9:45 AM   | <b>B150</b> | <b>The Presence of Inorganic Gunshot Residue (iGSR) in Police Vehicles: A Study at the Zagreb County Police Administration in Croatia</b><br><i>Sunčica Kuzmić, MChE*; Hrvoje Senjes, MS; Ivan Jerković, PhD, MSc</i>                                                                                              |
| 9:45 AM – 10:00 AM  | <b>B151</b> | <b>The Prevalence of GSR and the Mitigating Quality Procedures at Harris County Institute of Forensic Sciences</b><br><i>Brittany S. Claassen, MS*; Audrey Pless; Leslie A. Dixon, BS; Jason L. Schoeder, MS, MBA (FSF Emerging Forensic Scientist Award Oral Presentation)</i>                                    |
| 10:00 AM – 10:15 AM | <b>B152</b> | <b>Utilizing Gas Chromatography/Mass Spectrometry (GC/MS) to Determine the Effect of Solvent Extraction Parameters on Forensic Smokeless Powder Analysis</b><br><i>Leighann Rose Weber, BS*; Kelli A. Simon, PhD; Ryan Bain, PhD; Eric Hazelrigg, MS (FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 10:15 AM – 10:30 AM |             | <b>BREAK</b>                                                                                                                                                                                                                                                                                                       |

### Firearms

Moderator: Theron Fussell, BA

|                     |             |                                                                                                                                                                                                |
|---------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:30 AM – 10:45 AM | <b>B153</b> | <b>Advancements in 3D Technology and Virtual Comparison Microscopy for Ballistic Identification</b><br><i>Logan Eickhoff, BS, BA*</i>                                                          |
| 10:45 AM – 11:00 AM | <b>B154</b> | <b>Feature Similarity (FS) and Congruent Matching Features (CMF) Methods for Comparison of Impressed Toolmarks in Firearm Evidence Identification</b><br><i>Junfeng J. Song, PhD*</i>          |
| 11:00 AM – 11:15 AM | <b>B155</b> | <b>The Impact Behavior of 9mm Jacketed Hollow Point Bullets on Laminated Glass</b><br><i>Zoe Timothy, BS*; Michael Kusluski, MFS (FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 11:15 AM – 11:30 AM | <b>B156</b> | <b>The Interoperability of Firearm Toolmark 3D Measurements on Objective Similarity Metrics</b><br><i>Xiaoyu A. Zheng, MS*; Johannes Soons, PhD; James Yen, PhD</i>                            |
| 11:30 AM – 11:45 AM | <b>B157</b> | <b>The Effect of Gunshot Angle of Incidence on Distance Determination</b><br><i>Alexander W. Jason, MSFS*; Andres Marco, PhD, MS</i>                                                           |
| 11:45 AM – 1:00 PM  |             | <b>BREAK</b>                                                                                                                                                                                   |

# CRIMINALISTICS

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## Friction Ridge and Canines

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Moderator: Stephanie Armas, MS

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|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | <b>B158</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                            |
| 1:15 PM – 1:30 PM | <b>B159</b> | <b>Interdigital Frequencies of Pattern Types and Their Arrangements as a Key to Palm Print Identification</b><br><i>Angela Tonietto, MS*</i> ; <i>Jemima Santos</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                            |
| 1:30 PM – 1:45 PM | <b>B160</b> | <b>Toward Consistency in Latent Print Examiners' Naming Conventions and Minutiae Frequency Estimations</b><br><i>Adele Quigley-McBride, PhD*</i> ; <i>Heidi Eldridge, PhD, MS*</i> ; <i>Brett Gardner, PhD*</i>                                                                                                                                             |
| 1:45 PM – 2:00 PM | <b>B161</b> | <b>Not Everything Is as It Seems: The Importance of Minutiae</b><br><i>Julia Lazzari, MD*</i> ; <i>Giulia Berneschi, MD*</i> ; <i>Chiara Casula, MD</i> ; <i>Arianna Baronti, MD</i> ; <i>David Forni, MD</i> ; <i>Aniello Maiese, PhD</i> ; <i>Andrea Scatena, MD</i>                                                                                      |
| 2:00 PM – 2:15 PM | <b>B162</b> | <b>Dog Bites or Knife Wounds? A Case Report of Atypical Neck Injuries</b><br><i>Eulalie Pefferkorn*</i> ; <i>Fabrice Dedouit, MD, PhD</i> ; <i>Frederic Savall, MD, PhD</i> ; <i>Agathe Bascou, MD</i> ; <i>Norbert Telmon, MD, PhD</i> ; <i>Pauline Saint Martin, PhD</i>                                                                                  |
| 2:15 PM – 2:30 PM | <b>B163</b> | <b>Odor Contamination in Explosive Canine Training Aids and Steps Toward Contaminant Mitigation Through Off-Gassing</b><br><i>Katherine Dias Castro, BS*</i> ; <i>Lauryn DeGreeff, PhD</i> ; <i>Tyler Roberts</i> ; <i>Reagan M. Bridges</i> ; <i>Monica Lopez</i> ; <i>Jordi Cruz Sanchez</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 2:30 PM – 2:45 PM | <b>B164</b> | <b>An Improved Analysis of Nylon Microplastic Trace Evidence Through Enhanced Signal-to-Noise Ratio in Room-Temperature Fluorescence Spectroscopy</b><br><i>Noah Michael Froelich, MS, BS*</i> ; <i>Andres D. Campiglia, PhD</i>                                                                                                                            |
| 2:45 PM – 3:00 PM |             | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                                |

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## Trace Evidence, Fibers, Soil, Paint, and Footwear

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Moderator: Agnes Winokur, MS

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|-------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:00 PM – 3:15 PM | <b>B165</b> | <b>An Evaluation of a Comprehensive Raman Spectral Library for the Identification of Soil Minerals</b><br><i>Jasmine Kaur*</i> ; <i>Chase Notari, MS</i> ; <i>Brooke W. Kammrath, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 3:15 PM – 3:30 PM | <b>B166</b> | <b>Pigment Identification in Solution-Dyed Fibers</b><br><i>Christopher S. Palenik, MS, PhD*</i> ; <i>Kelly Beckert, MS, BS</i> ; <i>Otyllia Abraham, MS, BS</i> ; <i>Ethan Groves, BS</i> ; <i>Skip Palenik, BS</i>                                   |
| 3:30 PM – 3:45 PM | <b>B167</b> | <b>Polarized Light Microscopy of Vegetable Fibers</b><br><i>Walter Frederick Rowe, PhD*</i>                                                                                                                                                            |

# CRIMINALISTICS

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|-------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:45 PM – 4:00 PM | <b>B168</b> | <b>The Application of Particle-Correlated Raman Spectroscopic Analysis of Soils to Mock Casework Scenarios</b><br><i>Samantha Gong, BS*; Brooke W. Kammrath, PhD; Marisia A. Fikiet, PhD; Peter R. De Forest, DCrim</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                               |
| 4:00 PM – 4:15 PM | <b>B169</b> | <b>The Capabilities and Limitations of Particle-Correlated Raman Spectroscopy (PCRS) for the Analysis of Forensic Soil Minerals</b><br><i>Jasmine Kaur*; Joshua Christensen*; Ethan Groves, BS; Skip Palenik, BS; Christopher S. Palenik, MS, PhD; Peter R. De Forest, DCrim; Marisia A. Fikiet, PhD; Virginia M. Maxwell, DPhil, BSc; Brooke W. Kammrath, PhD</i> |
| 4:15 PM – 4:30 PM | <b>B170</b> | <b>The Differentiation of Architectural Paint by Sheen Using Reflectance Spectroscopy</b><br><i>Alethea Nicole Morris, BS*; Lawrence Quarino, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                                                 |
| 4:30 PM – 4:45 PM | <b>B171</b> | <b>The NIST Footwear Impression Comparison System</b><br><i>Steven Lund, PhD*; Sourabh Yelluru, MS; Adam Pintar, PhD; Hariharan Iyer, PhD</i>                                                                                                                                                                                                                      |

## Saturday

### Cannabis and Hemp

Moderator: Agnes Winokur, MS

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|---------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>B172</b> | <b>An Investigation of Extraction Protocols for the Analysis and Quantitation of Cannabinoids in Gummy Matrices Using Liquid Chromatography and Photodiode Array/Ultraviolet Detection</b><br><i>Haley Jensen, BS*; Aaron Urbas, PhD; Walter B. Wilson, PhD; Ira Saul Lurie, PhD</i>                   |
| 9:15 AM – 9:30 AM   | <b>B173</b> | <b>The Development of a <math>\Delta^9</math>-THC Colorimetric Breathalyzer Using 3D Printing Manufacture</b><br><i>Wagner Pacheco, PhD*; Igor Coreixas, MSc; Rafael Dornellas, PhD; Savanah Allinson; Shakyrah Golden; Justin L. Poklis, BS; Emanuele Alves, PhD</i>                                  |
| 9:30 AM – 9:45 AM   | <b>B174</b> | <b>Then vs. Now vs. the Future: An Overview of Extraction Protocols for Cannabis-Derived and Cannabinoid-Infused Products and the Development of a Universal Extraction Method</b><br><i>Benedetta Garosi, BS*; Rabi A. Musah, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)    |
| 9:45 AM – 10:00 AM  | <b>B175</b> | <b>Trace Metals in Cannabis Seized by Law Enforcement in Ghana and Multivariate Analysis to Distinguish Among Different Cannabis Farms</b><br><i>Edward Bentil, MPhil, BSc*; Brian Eckenrode, PhD; Isaac Ayensu, PhD; Joseph Adu, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 10:00 AM – 10:15 AM | <b>B176</b> | <b>Are Smokable Hemp Products Correctly Labeled?</b><br><i>Walter B. Wilson, PhD*; Aaron Urbas, PhD</i>                                                                                                                                                                                                |
| 10:15 AM – 10:30 AM | <b>B177</b> | <b>The Application of the Expert Algorithm for Substance Identification (EASI) to Resolve THC and CBD ESI-Mass Spectra</b><br><i>Alexandra I. Adeoye, MS*; Jacob King, BS; Glen P. Jackson, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                       |

# DIGITAL & MULTIMEDIA SCIENCES

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## Thursday

### JUST for Starters: Talking About The Forensic Analysis of Mobile Devices

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Moderator: Patrick Siewert, BS

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|--------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:50 AM  | <b>C1</b> | <b>A Forensic Analysis of Veo Micromobility Mobile Application on iOS® Devices</b><br><i>Nina Matulis, MS*</i> ; <i>Umit Karabiyik, PhD</i> ; <i>Marcus Rogers, PhD</i> ; <i>Baijian Yang</i>                                                    |
| 8:50 AM – 9:10 AM  | <b>C2</b> | <b>A Forensic Analysis on Major Android™ Cloud SDKs</b><br><i>Chen Shi, PhD*</i> ; <i>Yong Guan, PhD</i>                                                                                                                                         |
| 9:10 AM – 9:30 AM  | <b>C3</b> | <b>Geodata Sleuthing: Geo-Contextualized Digital Footprints Analysis to Empower Cyber Forensic Investigations and Life Pattern Analysis</b><br><i>Mohammad Meraj Mirza, PhD*</i> ; <i>Umit Karabiyik, PhD</i>                                    |
| 9:30 AM – 9:50 AM  | <b>C4</b> | <b>The Development, Testing, and Comparison of Decontamination Methods for Drugs and Ignitable Liquids From Mobile Devices</b><br><i>Christopher Michael Haser, BS*</i> ; <i>Kimberly S. Kunkler, PhD</i> ; <i>Lauren L. Richards-Waugh, PhD</i> |
| 9:50 AM – 10:00 AM |           | <b>BREAK</b>                                                                                                                                                                                                                                     |

### It JUST Goes to Show . . . Or Does It?

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Moderator: Vir Phoha, PhD

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|---------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:00 AM – 10:20 AM | <b>C5</b> | <b>Using File Structure to Authenticate Video Files Uploaded to Cloud Storage Via iOS® Mobile Web Browser</b><br><i>Brandon Epstein, MS*</i> ; <i>Bertram Lyons, MA*</i> |
| 10:20 AM – 10:40 AM | <b>C6</b> | <b>An Overview of Deepfake Technologies: From Creation to Detection in Forensics</b><br><i>Luca Guarnera, PhD*</i> ; <i>Sebastiano Battiato, PhD</i>                     |
| 10:40 AM – 11:00 AM | <b>C7</b> | <b>The Application of Artificial Intelligence in Forensic Science AI4Forensics From Deepfakes to Risks and Challenges</b><br><i>Zeno J. Geradts, PhD*</i>                |
| 11:00 AM – 11:20 AM | <b>C8</b> | <b>Searching for Hidden Data in Multimedia Files With UNCOVER</b><br><i>Zeno J. Geradts, PhD*</i>                                                                        |
| 11:20 AM – 1:00 PM  |           | <b>BREAK</b>                                                                                                                                                             |

# DIGITAL & MULTIMEDIA SCIENCES

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## JUST in Time: Verifying Multimedia Evidence

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Moderator: Umit Karabiyik, PhD

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|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:20 PM | <b>C9</b>  | <b>The Accuracy of Time Stamps on Surveillance Recording Devices</b><br><i>Benjamin Tyler Molnar, BSME*</i> ; <i>Toby Terpstra</i> ; <i>Tilo Voitel</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                   |
| 1:20 PM – 1:40 PM | <b>C10</b> | <b>Forensic Video Analysis of an Underwater Volcanic Explosion That Injured Multiple Tour Boat Passengers</b><br><i>Parris Ward, BA, JD*</i>                                                                                                           |
| 1:40 PM – 2:00 PM | <b>C11</b> | <b>An MDCT Analysis of Copy-Paste Fragments Without Query in Digital Forensic Audio</b><br><i>Catalin Grigoras, PhD*</i> ; <i>Cole Whitecotton, MSc</i>                                                                                                |
| 2:00 PM – 2:20 PM |            | <b>BREAK</b>                                                                                                                                                                                                                                           |
| 2:20 PM – 2:40 PM | <b>C12</b> | <b>Navigating the SILK Road: An Examination of WeChat SILK Audio Files</b><br><i>Andrew N. Crouse, BA*</i> ; <i>Douglas S. Lacey, MS, BS*</i> ; <i>Brian Smith, BS*</i> ; <i>In Yong Shin, BE</i> ; <i>Louis Chan, BBA</i> ; <i>Ricky W.K. Lam, BS</i> |
| 2:40 PM – 3:00 PM | <b>C13</b> | <b>Validation of Image Stream Hashing: A Forensic Method for Content Verification</b><br><i>Gregory S. Wales, DFS*</i>                                                                                                                                 |
| 3:00 PM – 3:30 PM |            | <b>BREAK</b>                                                                                                                                                                                                                                           |

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## JUSTice For All: Joining Digital & Multimedia With Jurisprudence

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Moderator: Grace Rubio, BS

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|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:30 PM – 3:50 PM | <b>C14</b> | <b>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</b><br><i>Joseph Levi White, PhD*</i>                                                                     |
| 3:50 PM – 4:10 PM | <b>C15</b> | <b>Uncovering Ethical and Legal Issues Associated With the Rising Trend of Using Chatbots—Crime Scene Investigation and Scientific Publishing</b><br><i>Ankita Guleria, MSc*</i> ; <i>Rakesh Meena, MSc</i> ; <i>Nandini Chitara, MSc</i> ; <i>Vishal Sharma, PhD</i> ; <i>Kewal Krishan, PhD</i> |
| 4:10 PM – 4:30 PM | <b>C16</b> | <b>The Case of the Distracted Pedestrian: The Importance of Experts in Digital Forensics</b><br><i>Jason R. Lewis, PhD*</i>                                                                                                                                                                       |
| 4:30 PM – 5:00 PM | <b>C17</b> | <b>The Potential for Impacting Unsolved Case Outcomes With the Inclusion of Digital and Multimedia Evidence (DME) Forensics Into Cold Case Units</b><br><i>Joseph Levi White, PhD*</i>                                                                                                            |

# DIGITAL & MULTIMEDIA SCIENCES

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## Friday

### JUST To Let You Know: Ensuring Quality and JUSTice in Digital & Multimedia Sciences

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Moderator: Tanveer Zia, PhD

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|---------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:20 AM   | <b>C18</b> | <b>A Study of Digital Evidence (DE) Processing Efficiencies in Publicly Funded Crime Laboratories</b><br><i>Christopher L. Williams, BS*</i> ; <i>Peyton Attaway, MPH</i> ; <i>Nichole D. Bynum, MS</i> ; <i>Crystal Daye, MPA</i> ; <i>Hope M. Smiley-McDonald, PhD</i> ; <i>John H. Grassel, MS</i>                |
| 9:20 AM – 9:40 AM   | <b>C19</b> | <b>Standards Development Activities in Digital and Multimedia Forensic Science</b><br><i>Tracy Walraven, MFS*</i>                                                                                                                                                                                                    |
| 9:40 AM – 10:00 AM  | <b>C20</b> | <b>What's VITAL When It Comes to Digital/Multimedia Standards? An Update From the OSAC Video/Imaging Technology &amp; Analysis (VITAL) Subcommittee</b><br><i>Christina A. Malone, MSFS*</i> ; <i>Marla E. Carroll, BS*</i> ; <i>Neil F. Johnson, PhD*</i> ; <i>Melissa Kimbrell</i> ; <i>Michelle Montonera, MS</i> |
| 10:00 AM – 10:10 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                                         |

### JUST The Facts: Computer Forensic Investigations

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Moderator: Alex Nelson, PhD

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|---------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:10 AM – 10:30 AM | <b>C21</b> | <b>The Integration of Forensic Science and Artificial Intelligence: The Implications in Crime Scene Investigations</b><br><i>Nandini Chitara, MSc*</i> ; <i>Damini Siwan, MSc*</i> ; <i>Ankita Guleria, MSc</i> ; <i>Rakesh Meena, MSc</i> ; <i>Vishal Sharma, PhD</i> ; <i>Kewal Krishan, PhD</i> |
| 10:30 AM – 10:50 AM | <b>C22</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                   |
| 10:50 AM – 11:10 AM | <b>C23</b> | <b>Live Memory Acquisition for STM32-Based Microcontrollers With ARM TrustZone</b><br><i>Karley Waguespack, BS*</i> ; <i>Aisha Ali-Gombe, PhD</i>                                                                                                                                                  |
| 11:10 AM – 11:30 AM | <b>C24</b> | <b>Live Memory Forensics of Field Devices in Industrial Control Systems</b><br><i>Irfan Ahmed*</i>                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM  |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                       |

# DIGITAL & MULTIMEDIA SCIENCES

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## This JUST In: Tools and Their Developments

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Moderator: Christina Malone, MSFS

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|-------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:20 PM | <b>C25</b> | <b>Provenience-Based Cross-Verification of Digital Forensic Artifacts Applied to NTFS</b><br><i>Alex J. Nelson, PhD*</i> ; <i>Sheldon L. Douglas</i>  |
| 1:20 PM – 1:40 PM | <b>C26</b> | <b>Testing File Carving Tools</b><br><i>James R. Lyle, MS, PhD*</i> ; <i>Barbara Guttman, BA</i>                                                      |
| 1:40 PM – 2:00 PM | <b>C27</b> | <b>The Latest Developments in Sailfish OS Forensics</b><br><i>Krassimir T. Tzvetanov, MS*</i>                                                         |
| 2:00 PM – 2:20 PM | <b>C28</b> | <b>Toward Personal Internet-of-Things User Attribution During Forensic Investigations</b><br><i>Shinelle Hutchinson*</i> ; <i>Umit Karabiyik, PhD</i> |
| 2:20 PM – 2:30 PM |            | <b>BREAK</b>                                                                                                                                          |

## JUST Think: New and Novel Techniques in Multimedia Forensics

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Moderator: Jason Latham, BA

|                   |            |                                                                                                                                                                                                      |
|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:30 PM – 2:50 PM | <b>C29</b> | <b>Deep Audio Analyzer: A Framework to Industrialize the Research on Audio Forensics</b><br><i>Valerio Francesco Puglisi, MS, BS*</i> ; <i>Sebastiano Battiato, PhD</i> ; <i>Oliver Giudice, PhD</i> |
| 2:50 PM – 3:10 PM | <b>C30</b> | <b>The Impact of Multi-Camera Smart Phones on Source Camera Identification</b><br><i>Stephanie Reinders, PhD*</i> ; <i>Danica M. Ommen, PhD</i> ; <i>Alicia Laura Carriquiry, PhD</i>                |
| 3:10 PM – 3:30 PM | <b>C31</b> | <b>Research and Development of the Next Generation Digital Forensic Image Transmission Tool</b><br><i>Kevin Fairbanks, PhD*</i> ; <i>Mark Guido, MS</i>                                              |
| 3:30 PM – 3:50 PM | <b>C32</b> | <b>Poses and Grimaces: Challenges for Automated Face Identification Algorithms?</b><br><i>Petra Urbanova, PhD*</i> ; <i>Dominik Cerny, MSc</i> ; <i>Tomas Goldmann, MSc</i>                          |

# ENGINEERING & APPLIED SCIENCES

## Thursday

### Poster Session

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11:30 AM – 1:00 PM     **D1**     **Technology Advances in Crime Scene Investigation**  
*Massimiliano Esposito, MD\**; *Gluseppe Li Rosi, PhD*; *Elisa Pappalardo, MD*; *Monica Salerno, MD*

### Forensic Analysis/Collision Reconstruction

Moderator: Kurt Weiss, MS

Co-Moderator: David Pienkowski, PhD

8:30 AM – 8:45 AM     **D2**     **A Method for the Evaluation of Upper Rear Vehicle Structures**  
*Brian Herbst, PE\**; *Chris Clarke, BS*

8:45 AM – 9:05 AM     **D3**     **Rear Impact Crashworthiness Defects Proven by Forensic Analysis Combined With Static and Dynamic Testing: The Failures of Seats, Head Restraints, and Belts**  
*Mark C. Pozzi, MS\**

9:05 AM – 9:20 AM     **D4**     **Mapping Vehicle Headlights to Identify the Threshold of Human Visual Performance in a Nighttime Visibility Study**  
*Jorge Mendoza, BS\**

9:20 AM – 9:30 AM     **D5**     **An Experimental Analysis of How Non-Nominal Sitting and Pyrotechnic Seat Belt Pretensioners Interact**  
*Adam Goodworth, MS, PhD\**

9:30 AM – 9:50 AM     **BREAK**

9:50 AM – 10:10 AM     **D6**     **Photogrammetry Software Used to Survey Site, Map Tire Friction Marks, and Recreate the Driver's View in Support of Alternative Collision Scenarios**  
*Kurt D. Weiss, MSME\**; *Jorge Mendoza, BSME*

10:10 AM – 10:30 AM     **D7**     **Recreational Vehicle Crashworthiness: Enhanced Injury Caused by Unsafe Vehicle Interior Structures Combined With Predictable Seat and Belt Failures**  
*Mark C. Pozzi, MS\**

10:30 AM – 10:45 AM     **D8**     **Visibility Study Uses Camera Tracking Software to Analyze Dashcam Video in a Bicycle Collision**  
*Jorge Mendoza, BS\**  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*

10:45 AM – 11:45 AM     **D9**     **Slip and Fall: Methods of Simulation and Validation of a Formula**  
*Darren Franck, MSME\**; *Harold Franck, MSEE\**; *Vincent D. Franck*; *Alexander Franck*

11:45 AM – 1:00 PM     **BREAK**

# ENGINEERING & APPLIED SCIENCES

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## Statistics and Machine Learning #1

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Moderator: Jatin Bodwal, MD

|                   |            |                                                                                                                                                                                           |
|-------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:20 PM | <b>D10</b> | <b>WITHDRAWN</b>                                                                                                                                                                          |
| 1:20 PM – 1:40 PM | <b>D11</b> | <b>Counterexamples for the Use of Spectrogram Comparison as a Method of Forensic Speaker Recognition by Law Enforcement and in Courts as Evidence</b><br><i>Jeffrey Nathaniel Holmes*</i> |
| 1:40 PM – 2:00 PM | <b>D12</b> | <b>Using Statistical Analysis to Assist With Writer Identification</b><br><i>Mike Wakshull, MS, BS*</i>                                                                                   |
| 2:00 PM – 2:20 PM | <b>D13</b> | <b>Linguistics, Computer Vision, and Handwriting Identification: HANDLER</b><br><i>Carole E. Chaski, PhD*</i>                                                                             |
| 2:20 PM – 2:35 PM |            | <b>BREAK</b>                                                                                                                                                                              |

## Statistics and Machine Learning #2

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Moderator: Jatin Bodwal, MD

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|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:35 PM – 2:55 PM | <b>D14</b> | <b>Presenting Model Uncertainty to Decision Makers</b><br><i>Willem A. Schreuder, PhD*</i>                                                                                                                                                                                         |
| 2:55 PM – 3:25 PM | <b>D15</b> | <b>Graph Theoretic Techniques for Image Comparisons</b><br><i>Gautham Venkatasubramanian*; Alicia Laura Carriquiry, PhD</i>                                                                                                                                                        |
| 3:25 PM – 3:30 PM | <b>D16</b> | <b>Quantitative Matching of Forensic Evidence Fragments Using Fracture Surface Topography and Statistical Learning</b><br><i>Ashraf Bastawros, PhD*; Ranjan Maitra, PhD; William Meeker, PhD; Lauren Claytor, MS, BS (FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 3:30 PM – 3:50 PM |            | <b>BREAK</b>                                                                                                                                                                                                                                                                       |

## Innovation in Forensic Science

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Moderator: Carole Chaski, PhD

|                   |            |                                                                                                                                                                                                                                                                                                                                      |
|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:50 PM – 4:05 PM | <b>D17</b> | <b>Innovation Fundamentals: The Prelude for Next Generation Advances in Forensic Sciences</b><br><i>David Pienkowski, PhD, MBA*; Jacklyn N. Ady, MBA, BS</i>                                                                                                                                                                         |
| 4:05 PM – 4:25 PM | <b>D18</b> | <b>What Researchers and Practitioners Should Know About the Forensic Innovation Ecosystem</b><br><i>Rebecca L. Shute, MS*</i>                                                                                                                                                                                                        |
| 4:25 PM – 4:40 PM | <b>D19</b> | <b>The Use of STL Technology and 3D Processing in Forensics: New Tools and a Multidisciplinary Approach</b><br><i>Gennaro Baldino, MD*; Fabio Salmeri*; Daniela Sapienza, MD*; Filippo Cucinotta; Marcello Raffaele; Alessio Altadonna; Cristina Mondello, MD; Vincenzo Cianci; Elvira Ventura Spagnolo, MD; Alessio Asmundo, MD</i> |
| 4:40 PM – 5:00 PM | <b>D20</b> | <b>Rule 702: Origins and Implications for Engineers and Attorneys</b><br><i>Gail Groy, JD*; David Pienkowski, PhD, MBA</i>                                                                                                                                                                                                           |

# ENGINEERING & APPLIED SCIENCES

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## Friday—Session I

### Poster Session

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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

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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 PM – 10:40 AM     **BREAK**

### Crime Investigation Techniques

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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**     **WITHDRAWN**

11:15 AM – 11:35 AM     **D28**     **WITHDRAWN**

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**

# ENGINEERING & APPLIED SCIENCES

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## Environmental

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Moderator: Kurt Weiss, MS

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|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | <b>D30</b> | <b>Environmental Forensic Microscopy Considering Assemblages for World Trade Center Dust and Wildfire Smoke</b><br><i>James Millette, PhD*</i>                                                               |
| 1:15 PM – 1:30 PM | <b>D31</b> | <b>Noxious Gas Inhalations—A Lethal Occupational Hazard While Cleaning Effluent Treatment Plants in India: A Forensic Analysis</b><br><i>Jatin Bodwal, MBBS, MD*; Mohit Chauhan, MBBS; MD</i>                |
| 1:30 PM – 1:45 PM | <b>D32</b> | <b>The Ruggedness of a Kinetic Model to Predict Chromatograms of Gasoline Under Different Evaporation Conditions</b><br><i>Hannah Jewell LaVoie, BS*; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD</i> |
| 1:45 PM – 2:00 PM |            | <b>BREAK</b>                                                                                                                                                                                                 |

## Artificial Intelligence: Machine Generated Text

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Moderator: Kurt Weiss, MS

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|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:00 PM – 2:20 PM | <b>D33</b> | <b>Data Collection of Forensically Feasible AI-Generated Texts: The ILE AI-Generated Corpus</b><br><i>Colton B. Wolk, BS*</i>                                                      |
| 2:20 PM – 2:40 PM | <b>D34</b> | <b>The Lexical Characteristics of AI-Generated Texts</b><br><i>Colton B. Wolk, BS*</i>                                                                                             |
| 2:40 PM – 3:00 PM | <b>D35</b> | <b>The Semantic Characteristics of AI-Generated Texts</b><br><i>Carole E. Chaski, PhD*</i>                                                                                         |
| 3:00 PM – 3:20 PM | <b>D36</b> | <b>The Syntactic Characteristics of AI-Generated Texts</b><br><i>Samuel Olanrewaju, MA*</i>                                                                                        |
| 3:20 PM – 3:35 PM | <b>D37</b> | <b>A Statistical Authorial Modeling of AI-Generated and Human-Generated Texts</b><br><i>Carole E. Chaski, PhD*; Colton Wolk, BS; Annabelle K. Bland, BS; Samuel Olanrewaju, MA</i> |

# ENGINEERING & APPLIED SCIENCES

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## ***Friday—Session II***

### **Multidisciplinary Session: Engineering & Applied Sciences and Forensic Nursing Science**

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Moderator: Kathy Bell

Co-Moderator: Paul Johnson, PhD

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|---------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>D38</b> | <b>Bone Injuries in Nursing Home Residents</b><br><i>David Pienkowski, PhD, MBA*</i>                                                                                                                                                                        |
| 9:15 AM – 9:30 AM   | <b>E20</b> | <b>Crowd Surge Triggers and Mitigating Factors</b><br><i>David A. Williams, DDS, MPH*; Joyce P. Williams, DNP, MFSA, RN</i>                                                                                                                                 |
| 9:30 AM – 9:45 AM   | <b>D39</b> | <b>Electrical Injury Causes: Part 2—Evidence Retention</b><br><i>Helmut G. Brosz, BASc, DBA*</i>                                                                                                                                                            |
| 9:45 AM – 10:00 AM  | <b>E21</b> | <b>Interdisciplinary Research Related to Sexual Violence and Dating App Usage</b><br><i>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</i> |
| 10:00 AM – 10:15 AM | <b>D40</b> | <b>Powered Two-Wheeler Safety: An Experimental Analysis of Injuries and Injury Mechanisms Using Instrumented PMHS</b><br><i>John H. Bolte, PhD, MSc*; Amanda M. Agnew, PhD; Yun-Seok Kang, PhD</i>                                                          |
| 10:15 AM – 10:30 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                                |
| 10:30 AM – 10:45 AM | <b>E22</b> | <b>Shaken Baby Syndrome—A Force to Be Reckoned With: A Case Review</b><br><i>Janean M. Fossum, BSN*</i>                                                                                                                                                     |
| 10:45 AM – 11:00 AM | <b>D41</b> | <b>What Is Known About Pregnant Occupants and Fetal Risk in Car Crashes</b><br><i>Adam Goodworth, MS, PhD*; Ciboney Hellenbrand; Charlotte Bloom; Ashley Pitzen</i>                                                                                         |
| 11:00 AM – 11:15 AM | <b>E23</b> | <b>"Compressed Baby Head": A New "Abusive Head Trauma" Entity?</b><br><i>Enrica Macorano, MD*</i>                                                                                                                                                           |
| 11:15 AM – 11:30 AM | <b>D42</b> | <b>A Child Fatality in a Vehicular Rear Impact: A Forensic Analysis and Static Testing to Scientifically Prove Seat and Belt Failures</b><br><i>Mark C. Pozzi, MS*</i>                                                                                      |

# FORENSIC NURSING SCIENCE

## Thursday

### Poster Session

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|--------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>E1</b> | <b>Is a Nurse Also a Forensic Nurse? Gaining a Forensic Insight: Empowering Nurses in Addressing Interpersonal Violence</b><br><i>Valeria Kaegi, RN; Michael J. Thali, MD*</i> |
| 11:30 AM – 1:00 PM | <b>E2</b> | <b>The Progress of Forensic Nursing in Japan</b><br><i>Naomi Kano*; Nanako Yoneyama, MS</i>                                                                                    |

### Morning Session

Moderator: Laurie Charles, MSN

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|---------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>E3</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                           |
| 9:15 AM – 9:30 AM   | <b>E4</b> | <b>Creating a Clinical Preceptor Course for SANE Pediatric/Adolescent Nurses</b><br><i>L. Kathleen L. Sekula, MSN, PhD*; Cheryl Wier, MSN, RN; Susan Buxbaum, DNP; Meghan Currie, BS</i>                                                                                                   |
| 9:30 AM – 9:45 AM   | <b>E5</b> | <b>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</b><br><i>Jamie Ferrell, MBA, BSN*; Mary E. Carrillo, MSN, MBA; Bryan Sisk, DNP, MPH</i> |
| 9:45 AM – 10:00 AM  | <b>E6</b> | <b>Tracking Sexual Assault Kits (SAKs) and CODIS-Eligible Profiles</b><br><i>Sabrina Riddles*; Ricardo Ruiz; Gang Han; Rebecca Vieh, MS; Nancy R. Downing, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)</i>                                                               |
| 10:00 AM – 10:15 AM | <b>E7</b> | <b>Who Doesn't Report to the Police? A Quantitative Analysis of Victim, Offender, and Assault Characteristics for Non-Report Sexual Assault Medical Forensic Examinations</b><br><i>Jessica Volz, DNP*; Rachael Goodman-Williams, PhD*</i>                                                 |
| 10:15 AM – 10:30 AM |           | <b>BREAK</b>                                                                                                                                                                                                                                                                               |

Moderator: Sylvia Perez, BSN

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|---------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:30 AM – 10:45 AM | <b>E8</b>  | <b>Lock-Downs Causing Lock-Ins: The Impact of the COVID-19 Pandemic on Domestic and Intimate Partner Violence Trends Observed by Forensic Nurse Examiners</b><br><i>Sydney Rachel Kennedy, PhD, MSN*; Christina Yannetsos, MD; Erin Aschman, RN; Kerry Peterson, PhD, DNP; Christine Foote-Lucero, MSN, RN</i> |
| 10:45 AM – 11:00 AM | <b>E9</b>  | <b>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</b><br><i>Kate Wilson, MS, BSc*; Sajeel Shah, PhD, MS; Nikolas Lemos, PhD</i>                                                             |
| 11:00 AM – 11:15 AM | <b>E10</b> | <b>We Can Help Health Care Professions Understand and Do More: The Survivors of Intimate Partner Violence in Israel Talk</b><br><i>Orli Grinstein-Cohen, RN, PhD*; Bar Eisenmann, RN</i>                                                                                                                       |
| 11:15 AM – 11:30 AM | <b>E11</b> | <b>Forensic Nursing in the Balkan Region</b><br><i>Ersi Abaci Kalfoglou*; Virginia A. Lynch, MSN; Sotirios Kalfoglou; Emel Hülya Yükseloğlu</i>                                                                                                                                                                |
| 11:30 AM – 1:00 PM  |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                                   |

# FORENSIC NURSING SCIENCE

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## Afternoon Session

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Moderator: Michelle Patch, PhD, MSN

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|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | <b>E12</b> | <b>Sexual Assault Has a Chokehold on Forensic Nursing</b><br><i>Crystal G. Schwerdtfeger, BS*</i> ; <i>Arianne Bauer, BS</i>                                                         |
| 1:15 PM – 1:30 PM | <b>E13</b> | <b>The Implementation of a Risk Assessment Screening Tool to Detect Elder Abuse in the Emergency Department</b><br><i>Laura La Cagnina, DNP, RN*</i>                                 |
| 1:30 PM – 1:45 PM | <b>E14</b> | <b>Forensic Nurse Focus: The Care of Persons With Disabilities</b><br><i>Janean M. Fossum, BSN*</i>                                                                                  |
| 1:45 PM – 2:00 PM | <b>E15</b> | <b>A Forensic Nursing Response to Workplace Violence Using the Worker Well-Being® Model</b><br><i>Jessica Volz, DNP*</i> ; <i>Karen Heaton, PhD</i> ; <i>Patricia M. Speck, DNSc</i> |
| 2:00 PM – 2:15 PM |            | <b>BREAK</b>                                                                                                                                                                         |

Moderator: Jessica Volz, DNP

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|-------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:15 PM – 2:30 PM | <b>E16</b> | <b>Forensic Nursing Science: Investigation as a Care Component in Trauma and Death</b><br><i>Virginia A. Lynch, MSN*</i> ; <i>Carrie E. Edwards, PhD*</i>                                                                                                                                                                                                                                                                                       |
| 2:30 PM – 2:45 PM | <b>E17</b> | <b>The Forensic Nurse's Role in Investigating Trauma: Two Clinical Case Studies on Factitious Disorder</b><br><i>Carrie E. Edwards, PhD*</i> ; <i>Virginia A. Lynch, MSN</i> ; <i>Donna Scott Tilley, PhD, RN</i>                                                                                                                                                                                                                               |
| 2:45 PM – 3:00 PM | <b>E18</b> | <b>Mapping Forensic Nursing Competencies for Disaster Situations</b><br><i>Thiago Augusto Soares Monteiro Da Silva*</i> ; <i>Débora Fernanda Haberland</i> ; <i>Thais da Silva Kneodler</i> ; <i>Alex Coelho da Silva Duarte</i> ; <i>Joyce P. Williams, DNP, RN</i> ; <i>Alexandre Barbosa de Oliveira</i>                                                                                                                                     |
| 3:00 PM – 3:15 PM | <b>E19</b> | <b>The Role of the Forensic Nurse as a New Method of Managing the Quality and Timeliness of Carrying Out the Autopsy</b><br><i>Isabella Aquila, PhD, MD*</i> ; <i>Matteo Antonio Sacco, MD*</i> ; <i>Maria Cristina Verrina, MD</i> ; <i>Luca Calanna, MD</i> ; <i>Martino Maesani, MD</i> ; <i>Elisa Folino</i> ; <i>Marinika Salasco</i> ; <i>Pietro Tarzia</i> ; <i>Alessandro Pasquale Tarallo, MD</i> ; <i>Pietrantonio Ricci, PhD, MD</i> |

# FORENSIC NURSING SCIENCE

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## Friday

### Multidisciplinary Session: Engineering & Applied Sciences and Forensic Nursing Science

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Moderator: Kathy Bell

Co-Moderator: Paul Johnson, PhD

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|---------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>D38</b> | <b>Bone Injuries in Nursing Home Residents</b><br><i>David Pienkowski, PhD, MBA*</i>                                                                                                                                                                        |
| 9:15 AM – 9:30 AM   | <b>E20</b> | <b>Crowd Surge Triggers and Mitigating Factors</b><br><i>David A. Williams, DDS, MPH*; Joyce P. Williams, DNP, RN</i>                                                                                                                                       |
| 9:30 AM – 9:45 AM   | <b>D39</b> | <b>Electrical Injury Causes: Part 2—Evidence Retention</b><br><i>Helmut G. Brosz, BASc, DBA*</i>                                                                                                                                                            |
| 9:45 AM – 10:00 AM  | <b>E21</b> | <b>Interdisciplinary Research Related to Sexual Violence and Dating App Usage</b><br><i>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</i> |
| 10:00 AM – 10:15 AM | <b>D40</b> | <b>Powered Two-Wheeler Safety: An Experimental Analysis of Injuries and Injury Mechanisms Using Instrumented PMHS</b><br><i>John H. Bolte, PhD, MSc*; Amanda M. Agnew, PhD; Yun-Seok Kang, MD</i>                                                           |
| 10:15 AM – 10:30 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                                |
| 10:30 AM – 10:45 AM | <b>E22</b> | <b>Shaken Baby Syndrome—A Force to Be Reckoned With: A Case Review</b><br><i>Janean M. Fossum, BSN*</i>                                                                                                                                                     |
| 10:45 AM – 11:00 AM | <b>D41</b> | <b>What Is Known About Pregnant Occupants and Fetal Risk in Car Crashes</b><br><i>Adam Goodworth, MS, PhD*; Ciboney Hellenbrand; Charlotte Bloom; Ashley Pitzen</i>                                                                                         |
| 11:00 AM – 11:15 AM | <b>E23</b> | <b>"Compressed Baby Head": A New "Abusive Head Trauma" Entity?</b><br><i>Enrica Macorano, MD*</i><br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i>                                                                                       |
| 11:15 AM – 11:30 AM | <b>D42</b> | <b>A Child Fatality in a Vehicular Rear Impact: A Forensic Analysis and Static Testing to Scientifically Prove Seat and Belt Failures</b><br><i>Mark C. Pozzi, MS*</i>                                                                                      |

# GENERAL

## Wednesday

### Poster Session

|                    |            |                                                                                                                                                                                                                                                                                                                                                |
|--------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>F1</b>  | <b>WITHDRWN</b>                                                                                                                                                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F2</b>  | <b>The Determination of Time Since Deposition of Blood Samples Via Alanine Quantification</b><br><i>Estreylla D. Sierra, MS*; Jan Halamek, PhD</i>                                                                                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>F3</b>  | <b>The Determination of Lead (Pb) in Cosmetic Samples by Graphite Furnace Atomic Absorption Spectrometer (GFAAS)</b><br><i>Kapil Kumar*; Ashok Kumar Jaiswal, PhD; T. Millo</i>                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F4</b>  | <b>Investigating Student Perceptions of Learning in the Flipped Classroom Setting Within a Forensic Science Course</b><br><i>Lacey Victoria Sharman*; Amanda C. Chee-Awai; Tamra Legron-Rodriguez, PhD</i>                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>F5</b>  | <b>How Do Kinetic Energy and Firearm-to-Target Distance Influence Fracture Morphology?</b><br><i>Delaney Edwards, MA*; Mariyam I. Isa, PhD</i>                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>F6</b>  | <b>Success Rates for Positive Identification Using Multiple Fingerprint Methods in a Mid-South Population</b><br><i>Brittany Wexler, MSc, BSc*; Diana Messer, PhD; Marco Ross, MD; Nathan Gathright (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                            |
| 11:30 AM – 1:00 PM | <b>F7</b>  | <b>Gunshot Defense Wounds: The Need for a Specific Classification</b><br><i>Laura Ambrosi*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Carravetta, DM; Antonio Straface, MD; Biagio Solarino</i>                                                                                                              |
| 11:30 AM – 1:00 PM | <b>F8</b>  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>F9</b>  | <b>Dating Traumatic Brain Injury With a Dura Mater Immunohistochemical Assay: An Ongoing Study</b><br><i>Marcello Benevento, MD*; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Carravetta, DM; Antonio Straface, MD; Laura Ambrosi; Francesco Merlanti; Biagio Solarino (FSF Emerging Forensic Scientist Award Poster Presentation)</i> |
| 11:30 AM – 1:00 PM | <b>F10</b> | <b>An Evaluation of Explosive Odor Signature Persistence on Training Aid Substrates</b><br><i>Juliet Leslie DeNapoli, BSA*; Paola A. Prada-Tiedemann, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>F11</b> | <b>The Opioid Revival: A Case Report Where Toxicology Meets Music</b><br><i>Simona Nicoli, DM*; Cristina Caterino, DM; Marcello Benevento, MD; Laura Ambrosi, MD; Antonio Straface, MD; Francesco Carravetta, DM; Biagio Solarino</i>                                                                                                          |
| 11:30 AM – 1:00 PM | <b>F12</b> | <b>Establishing the Manner of Death: A 3D Reconstruction of a Case of Hanging</b><br><i>Laura Ambrosi*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Francesco Carravetta, DM; Antonio Straface, MD; Biagio Solarino</i>                                                                                                  |
| 11:30 AM – 1:00 PM | <b>F13</b> | <b>Electric Scooter-Related Accidents: A Possible Protective Effect of Helmet Use on Head Injury Severity</b><br><i>Giovanni Aulino, MD*; Silvia Valentini, MD; Marcello covino, MD, PhD; Francesca Cittadini, MD</i>                                                                                                                          |

# GENERAL

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| 11:30 AM – 1:00 PM | <b>F14</b> | <b>Contention and Restraint: Medicolegal Aspects of a Controversial Practice</b><br><i>Giulia Berneschi, MD*; Carla Occhipinti, MD*; Andrea Costantino, MD; Chiara Toni, MD, PhD; Arianna Baronti, MD; Rebecca Pieretti, MD</i>                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>F15</b> | <b>“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</b><br><i>Ilaria Marcacci, MD*; Naomi Iacoponi, MD*; Julia Lazzari, MD; Andrea Costantino, MD; Luigi Papi, MD; David Forni, MD; Claudia Giaconi, MD; Silvio Chericoni, PhD</i>                            |
| 11:30 AM – 1:00 PM | <b>F16</b> | <b>“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</b><br><i>Ilaria Marcacci, MD*; Arianna Baronti, MD; Federica Spina, MD; Giulia Berneschi, MD*; Matteo Leoni, MD; Marco Di Paolo, MD</i>                                                            |
| 11:30 AM – 1:00 PM | <b>F17</b> | <b>The Postmortem Identification of Decomposed Bodies Using Mikrosil™ Fingerprint Impressions</b><br><i>Madeline Rivera, MS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*</i>                                                                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>F18</b> | <b>Fungal Interaction in Mammalian Decomposition in the New Jersey Pine Barrens</b><br><i>Jacquelyn V. Gross, BS*; Jennifer Oberle, PhD; Jessica Lynne Metcalf, PhD; Kimberlee S. Moran, AB, MSc</i>                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>F19</b> | <b>Deadly Fettuccine With Bolognese Sauce: A Case of Sudden Death in a Woman Suffering From Achalasia</b><br><i>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 Malaspina, MD; Gulnaz T. Javan, PhD; Silvia D. Visonà, MD, PhD; Luca Morini, PhD</i> |
| 11:30 AM – 1:00 PM | <b>F20</b> | <b>The Climate's Influence on Fingerprint Quality</b><br><i>Timothy Juedes, MFS*; Caitlyn Grotjahn; Jenna Wilson</i>                                                                                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>F21</b> | <b>Investigating the Effect Flipped Classroom Structure Has on Perceived Student Engagement in a Post-Secondary Forensic Science Course</b><br><i>Amanda C. Chee-Awai*; Lacey Victoria Sharman; Tamra Legron-Rodriguez, PhD</i>                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>F22</b> | <b>Characterizing Flow Cytometry Analysis of Pollen Mixtures</b><br><i>Slun Booppasiri*; Larry Tang, PhD; Jack Trimble; Matthieu Baudelet, PhD; Luz J. Kelley; Alicja Copik</i>                                                                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>F23</b> | <b>Determining Possible Causality of Inherent Fluorescence in Fingerprint Residue</b><br><i>Brenda Marchetti, MS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*</i>                                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>F24</b> | <b>The Influence of Handwashing and Handedness on the Fingerprint Microbiome Over Time</b><br><i>Sarah Jackman, BS*; Josep De Alcaraz-Fossoul, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>F25</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>F26</b> | <b>Death Due to Miracle Mineral Solution (MMS)</b><br><i>Sami Souccar*; Juan Carrillo; Brice Hunt, MD</i>                                                                                                                                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>F27</b> | <b>Missing and Murdered Indigenous People: The American Southwest</b><br><i>Sharon K. Moses, PhD*</i>                                                                                                                                                                                                                                                                                |

# GENERAL

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| 11:30 AM – 1:00 PM | <b>F28</b> | <b>Is the Famous California Palm Tree a Serial Killer? A Unique Mechanism of Death in Tree Trimming Accidents</b><br><i>Sami Souccar*</i> ; Brice Hunt, MD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>F29</b> | <b>The Effects of Overlapped Latent Fingermarks on Skin Microbiomes Deposited Over Time</b><br><i>Lauren Welch*</i> ; Josep De Alcaraz-Fossoul, PhD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                        |
| 11:30 AM – 1:00 PM | <b>F30</b> | <b>The Use of GIS Mapping to Assist With Forensic Recoveries of Historic Aircraft Crash Sites</b><br><i>Audrey M. Lauerhass*</i> ; Tiffany B. Saul, PhD; Adam Fracchia, PhD                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>F31</b> | <b>The Application of Forensic Genetic Genealogy in Criminal Investigation</b><br><i>Jeff Cheng-Lung Lee*</i> ; Wenping Liu                                                                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>F32</b> | <b>Multidisciplinary Teamwork: The Excavation of a Grave Enshrouded by a Banyan Tree</b><br><i>Denise To, PhD*</i> ; Robert Ingraham, MSc; Allison M. Campo, MA; Audrey Scott, PhD                                                                                                                                                                        |
| 11:30 AM – 1:00 PM | <b>F33</b> | <b>Driving While Intoxicated: Why Are DWI Cases Being Dismissed in New Jersey?</b><br><i>Christopher Dudzik, MA, BS*</i> ; Gloria Raise; Amanda Joy O'Connor, BS;<br>Denise Gemmellaro, PhD*                                                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>F34</b> | <b>Approaches to Investigating Textile Damage in Stabbing Cases: A Forensic Analysis and Reconstruction</b><br><i>Sotirios Ziogos, BSc, MFSc; Kari Pitts, PhD; Ian R. Dadour, MSc, PhD*</i> ; Paola A. Magni, PhD                                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>F35</b> | <b>Unraveling an Unusual Homicide: Asphyxia Due to Obstruction of Respiratory Orifices in a Subject With Acute Benzodiazepine and Tricyclic Antidepressant Intoxication</b><br><i>Arianna Rifiorito, MD*</i> ; Valeria Giglio, MD; Dario Scaglione, MD; Vanessa Milazzo, MD;<br>Roberto Buscemi; Valentina Triolo, MD; Manfredi Rubino, MD; Antonina Argo |
| 11:30 AM – 1:00 PM | <b>F36</b> | <b><i>Staphylococcus Aureus</i> Strikes Again! Never Underestimate a Furunculous Infection: An Autopsy Case Report of Acute Bacterial Spinal Meningitis in a Young Female</b><br><i>Fabio Del Duca, MD*</i> ; 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 | <b>F37</b> | <b>Closing Cases and Reducing Risk: A New Training Curriculum for Law Enforcement on Conducting Investigations With Transgender Crime Victims</b><br><i>Robert Eckstein, PsyD*</i> ; Amy Michael, PhD                                                                                                                                                     |

## Thursday—Session I

### Face and Feet

Moderator: Bryan Brendley, PhD

Co-Moderator: Jayme Dozier, MS

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|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM | <b>F38</b> | <b>Emerging Paradigms in Forensic Facial Comparison Through Artificial Intelligence</b><br><i>Oscar Ibáñez Panizo, PhD*</i> ; Enrique Bermejo, PhD; Alejandro Manzanares;<br>Antonio David Villegas, MSc, BS; Andrea Valsecchi, PhD         |
| 8:45 AM – 9:00 AM | <b>F39</b> | <b>The Reliability of the Viola-Jones Algorithm for Detecting Pose Variant Facial Features</b><br><i>Lovepreet Kaur, MSc*</i> ; Mukesh Kumar K. Thakar, PhD; Navdeep Goel, PhD<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |

# GENERAL

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|---------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:15 AM   | <b>F40</b> | <b>The Marion Figure-Ground Hypothesis: A Perspective on the Art-Science Relationship in a Facial Reconstruction (A-SR) In A (FR)</b><br><i>Daniel Marion, MFA, PhD*</i> |
| 9:15 AM – 9:30 AM   | <b>F41</b> | <b>An Update on the Status of Facial Identification</b><br><i>Steven L. Johnson, BS*</i>                                                                                 |
| 9:30 AM – 9:45 AM   | <b>F42</b> | <b>Forensic Podiatry: An Important Discipline in the Analysis of Feet, Footprints, Gait, and Trackways</b><br><i>Kewal Krishan, PhD*</i>                                 |
| 9:45 AM – 10:00 AM  | <b>F43</b> | <b>Further Observations Into the Linking of Footprints With Footwear-Forensic Implications and Interpretations</b><br><i>Kewal Krishan, PhD*</i>                         |
| 10:00 AM – 10:15 AM | <b>F44</b> | <b>The Casting of Shallow Footwear Impressions: A Field Test of Comparisons Between 3D Photographing and 3D Laser Printing Methods</b><br><i>John Z. Wang, PhD*</i>      |
| 10:15 AM – 10:30 AM |            | <b>BREAK</b>                                                                                                                                                             |

## COVID and Humanitarian

Moderator: Tom Bevel, MA

Co-Moderator: Mohammed Almazrouei, PhD

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| 10:30 AM – 10:45 AM | <b>F45</b> | <b>Selected Trends From COVID-19 Prospective Data Collection at the Tarrant County Medical Examiner's Office</b><br><i>Lilly G. Crowns, BS*; Stacey Murthy, MD; John Briggs</i>                                                                                                                                                                                                                                    |
| 10:45 AM – 11:00 AM | <b>F46</b> | <b>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"</b><br><i>Domenicantonio Iannello, MD*; Gennaro Baldino, MD*; Concetta Fenga; Antonio Cascio; Francesco Corica; Carmelo Nobile; Rocco Pistininzi, MD; Pietro Tarzia; Cristina Genovese, PhD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD</i> |
| 11:00 AM – 11:15 AM | <b>F47</b> | <b>Humanitarian Forensics: A Call to the Scientific Community From the International Committee of the Red Cross</b><br><i>Pierre Guyomarc'h, PhD*</i>                                                                                                                                                                                                                                                              |
| 11:15 AM – 11:30 AM | <b>F48</b> | <b>Asylum Seekers and Victims of Torture in Sicily, Italy: The Role of Forensic Medicine in the Mediterranean Migratory Crisis</b><br><i>Giuseppe Davide Albano*; Corinne La Spina; Valeria Tullio; Mauro Midiri; Stefania Zerbo; Antonina Argo</i>                                                                                                                                                                |
| 11:30 AM – 11:45 AM | <b>F49</b> | <b>Multiband Imaging Methods in Humanitarian Forensic Medicine to Enhance the Readability of Documents From Mediterranean Shipwreck Victims</b><br><i>Lorenzo Franceschetti, MD, PhD*; Marco Gargano, PhD; Andrea Palamenghi, BSc; Debora Mazzarelli, BSc; Martina Cabrini, BSc; Alice Plutino, BSc; Cristina Cattaneo, MD, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)</i>                      |
| 11:45 AM – 12:00 PM | <b>F50</b> | <b>Breaking Barriers: Empowering Forensic Dermatologists in Asylum Applications Through Identifying Evidence of Torture in Ethnic Skin Variations</b><br><i>Mishaal Fatima*; Sajeel A. Shah, PhD; Nikolas P. Lemos, PhD</i>                                                                                                                                                                                        |

# GENERAL

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|---------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:00 PM – 12:15 PM | <b>F51</b> | <b>The Contribution of Immunohistochemistry in Assessing Cruelty as an Aggravating Factor of Homicide</b><br><i>Marcello Seligardi*</i> ; Edda E. Guareschi, MD, PhD; Laura Donato; Francesco Calabrò; Rossana Cecchi, MD |
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| 12:15 PM – 1:45 PM | <b>BREAK</b> |
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## Genetics and the Elderly

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Moderator: Eugenio Alladio, PhD

Co-Moderator: Kimberly Pavlik, PhD

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|-------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:45 PM – 2:00 PM | <b>F52</b>   | <b>A Probabilistic Genotyping Analysis of Touch DNA and Transfer Evidence</b><br><i>Charis Ann Hickey, BS*</i> ; Amy K. Smith, MS; Kelly J. Beatty, MSFS; Eric Miller, MS<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                  |
| 2:00 PM – 2:15 PM | <b>F53</b>   | <b>How to Talk to Your Genetic Genealogist: The Language of Kinship</b><br><i>Tynan Peterson, MA, BFA*</i> ; Melanie Thomas Armstrong, BA                                                                                                                                                               |
| 2:15 PM – 2:30 PM | <b>F54</b>   | <b>Forensic Genetic Genealogy: Not Just for Solving Homicides</b><br><i>Michelle S. Clark, BS, MS*</i> ; James R. Gill, MD                                                                                                                                                                              |
| 2:30 PM – 2:45 PM | <b>F55</b>   | <b>Is There a Lesser-Value Type of Violence? Older People Abuse: “The Silence of the Lambs”</b><br><i>Ludovica Busillo, MD; Gaetano Di Donna, MD*</i> ; 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 | <b>F56</b>   | <b>A Differential Diagnosis Between Elder Neglect and the Pathophysiology of Aging: Medicolegal Aspects From a Case of Death by Hypothermia</b><br><i>Lorenzo Franceschetti, MD, PhD*</i> ; Ilaria Tarozzi, MD; Valentina Bugelli, PhD, MD<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 3:00 PM – 3:15 PM | <b>F57</b>   | <b>Caregiver Burden and Elder Abuse: Medicolegal Perspectives From Two Fatal Cases</b><br><i>Ilaria Tarozzi, MD*</i> ; Lorenzo Franceschetti, MD, PhD; Valentina Bugelli, PhD, MD                                                                                                                       |
| 3:15 PM – 3:30 PM | <b>BREAK</b> |                                                                                                                                                                                                                                                                                                         |

## Cold Cases

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Moderator: Taylor Lowry, BS, BA

Co-Moderator: Joe Trevino, MS

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|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:30 PM – 3:45 PM | <b>F58</b> | <b>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</b><br><i>Lorenzo Franceschetti, MD, PhD*</i> ; 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<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 3:45 PM – 4:00 PM | <b>F59</b> | <b>A Cold Case Homicide Involving Partial Dismembered Human Remains Found in a Dumpster Resolved by a Three-Decade-Old Complex Diligent Police Investigation</b><br><i>Lakshmanan Sathyavagiswaran, MD*</i> ; John Lamberti, BA*; Tamara Momayez                                                                                                                                                                                                                                               |

# GENERAL

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| 4:00 PM – 4:15 PM | <b>F60</b> | <b>Homicide Motel: Justice Served After Decades of Waiting</b><br><i>Tracy Brisendine, BA*</i>                                                                                      |
| 4:15 PM – 4:30 PM | <b>F61</b> | <b>A Cold Case Homicide Solved "The Old-Fashioned Way" After 37 Years</b><br><i>Beth S. Goodspeed, MS*</i>                                                                          |
| 4:30 PM – 4:45 PM | <b>F62</b> | <b>Resting in Honored Glory: Identifying the Unknown Soldiers of the Segregated 92nd Infantry Division in World War II</b><br><i>Traci L. Van Deest, PhD*; Sarah Barksdale, PhD</i> |

## Thursday—Session II

### Crime Scenes

Moderator: Kyle Scherrer, MSFS

Co-Moderator: Amber Riley, MS

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|---------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM   | <b>F64</b> | <b>Establishing the Identity of the Dead Through a Complimentary Missing Person Registry With Unidentified Dead Bodies in the Indian Context: An Ethical Imperative</b><br><i>Nasir Muhammad Ahmad, MSc, PhD*; Vina R. Vaswani, MD, PhD</i>                                   |
| 8:45 AM – 9:00 AM   | <b>F65</b> | <b>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</b><br><i>Erge Yurtdas, MA*; Maria Michael, MA, PhD*; Demet Karşılı, MA*</i> |
| 9:00 AM – 9:15 AM   | <b>F66</b> | <b>Exercising Due Diligence: Utilizing Novel Multidisciplinary Methods in the Recovery of Skeletal Remains</b><br><i>Brett E. Harding, MBA*; Jessica Macdonald, BS, MA; Zackary Rushton, BA; Ryan Belanger, BS; Amethyst Crowe, BA; Chiara Mancini, DO</i>                    |
| 9:15 AM – 9:30 AM   | <b>F67</b> | <b>Challenges in Identification and Repatriation of Anjala (India) Skeletal Remains: A Humanitarian Forensic Concern</b><br><i>Jagmahender Sehrawat, PhD*</i>                                                                                                                 |
| 9:30 AM – 9:45 AM   | <b>F68</b> | <b>The Ethics of Dead Bodies/Body Remains Following Disasters: A Qualitative Study</b><br><i>Vina R. Vaswani, MD, PhD*; Bert Gordijn, PhD</i>                                                                                                                                 |
| 9:45 AM – 10:00 AM  | <b>F69</b> | <b>Surfing the Dark Web</b><br><i>Kim Fallon, BS*</i>                                                                                                                                                                                                                         |
| 10:00 AM – 10:15 AM | <b>F70</b> | <b>Eye Tracking in Evaluating the Decision-Making of Crime Scene Investigators: A Pilot Study</b><br><i>Xiaotang Guo, MSc, MRes*; Sherry Nakhaeizadeh, PhD; David Lagnado, MSc, PhD</i>                                                                                       |
| 10:15 AM – 10:30 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                                                  |

# GENERAL

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## Dogs, Fire, and Detection

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Moderator: Francesco Sessa, PhD, MS

Co-Moderator: Carlos Gutierrez, PhD

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| 10:30 AM – 10:45 AM | <b>F71</b> | <b>The Road to Standard Development: An Update From Dogs and Sensors</b><br><i>Paola A. Prada-Tiedemann, PhD*</i> ; <i>Sara S. Perry, BS</i> ; <i>Kenneth G. Furton, PhD</i>                                                                                                                                                                                                                                                            |
| 10:45 AM – 11:00 AM | <b>F72</b> | <b>Human Remains Detection Dogs and Residual Odor</b><br><i>Melissa A. Connor, PhD*</i> ; <i>Alexander J. Smith, BA</i> ; <i>Georgia Swelstad, BS</i>                                                                                                                                                                                                                                                                                   |
| 11:00 AM – 11:15 AM | <b>F73</b> | <b>A Multidisciplinary Approach to K-9 Human Remains Detection: The Integration of Medical Examiners, Forensic Anthropologists, and Medicolegal Investigators With the K-9 Team</b><br><i>Michele S. Slone, MD*</i> ; <i>Angela Soler, PhD</i> ; <i>Jennifer K. Odien, PhD</i> ; <i>Justin Z. Goldstein, MA</i> ; <i>Bradley J. Adams, PhD</i> ; <i>Nicholas W. Schultz, BS</i> ; <i>Dennis Cavalli, MPH</i> ; <i>Scott Mateyaschuk</i> |
| 11:15 AM – 11:30 AM | <b>F74</b> | <b>The Effect of Compressed Air Foam on the Detection of Ignitable Liquid Residues on Fire Debris Samples</b><br><i>Victor Omondi, BSc, MSc*</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                                                                                                                           |
| 11:30 AM – 11:45 AM | <b>F75</b> | <b>The Impacts of Thermocouple Insulation Failure on the Accuracy of Temperature Measurement Data in Forensic Fire-Death Scenarios</b><br><i>David Silveira, MS*</i> ; <i>Ashley Kendell, PhD</i> ; <i>Beth Shook, PhD</i>                                                                                                                                                                                                              |
| 11:45 AM – 12:00 PM | <b>F76</b> | <b><i>In Situ</i> Detection of Gunshot Residue on Fabric Using Attenuated Total Reflectance/Fourier Transform Infrared Spectroscopy</b><br><i>Igor K. Lednev, PhD*</i>                                                                                                                                                                                                                                                                  |
| 12:00 PM – 12:15 PM | <b>F77</b> | <b>An Exploratory Study of 3D Fused Deposition Modeling (FDM) and Polylactic Acid (PLA+) Filament Deposition as Toolmark Signatures for Common Source Comparison and Identification</b><br><i>Steven Pavlovich, RMT*</i>                                                                                                                                                                                                                |
| 12:15 PM – 1:30 PM  |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                                                                                                            |

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## Birds, Water, Loved Ones, and Convictions

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Moderator: Cliff Akiyama, MPH, MA

Co-Moderator: Imron Ramos, MFS

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|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:30 PM – 1:45 PM | <b>F78</b> | <b>Fatal Sexual Assaults Toward Animals (Birds) and Bestiality</b><br><i>Gilles P. Tournel, MD, PhD*</i> ; <i>Bérengère Dautreme</i> ; <i>Audrey Sersoise</i> ; <i>Elise Hardoin</i> ; <i>Benjamin Charroy</i> ; <i>Lisa Gouellain</i> ; <i>Albane Guigne</i> |
| 1:45 PM – 2:00 PM | <b>F79</b> | <b>A Review of Global Egg and Nestling Theft and Collection Practices</b><br><i>Kali E. Goding, MS*</i> ; <i>Ngaio L. Richards, PhD, MSc</i> ; <i>Fabio Oldoni, PhD</i> ; <i>Susan C. Underkoffler</i>                                                        |
| 2:00 PM – 2:15 PM | <b>F80</b> | <b>A Retrospective Study of Displacement and Recovery Patterns for Water Fatalities in British Columbia, Canada</b><br><i>Britny A. Martlin, BA, MSc*</i> ; <i>Lynne S. Bell, MSc, PhD</i>                                                                    |
| 2:15 PM – 2:30 PM | <b>F81</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                              |

# GENERAL

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|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:30 PM – 2:45 PM | <b>F82</b> | <b>Intimate Partner Violence-Related Strangulation (IPVRS)</b><br><i>Katherine M. Brown, PhD*;</i> Cortney A. Franklin, PhD; Tara O. Shelley, PhD                                |
| 2:45 PM – 3:00 PM | <b>F83</b> | <b>Sudden Infant Death Syndrome and the Risk Factors of an Insecure Sleep Environment</b><br><i>Hind Abouzahir, MD, PhD*</i>                                                     |
| 3:00 PM – 3:15 PM | <b>F84</b> | <b>Examining Youth Gangs From a Trauma Exposure Perspective</b><br><i>Cliff Akiyama, MPH, MA*</i>                                                                                |
| 3:15 PM – 3:30 PM | <b>F85</b> | <b>An Assessment of the Reliability of Subjective Pattern Evidence Disciplines Based on Evidence From Wrongful Convictions</b><br><i>John Morgan*</i>                            |
| 3:30 PM – 3:45 PM | <b>F86</b> | <b>Wrongful Convictions and Jurisprudence of DNA Forensics: An Indian Scenario</b><br><i>Garima Chaudhary, PhD*</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |

## Friday

### Poster Session

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| 11:30 AM – 1:00 PM | <b>F87</b> | <b>A Quiet Place: A Case of a Double Homicide in a Corn Field</b><br><i>Sofia Bodini, MD; Pietro Clemente C. Salmoirago, MD*;</i> Domenico De Stradis;<br>Elena Cavriani, MD; Laura Scotti, MD; Caterina Pelligra, MD; Silvia D. Visonà, MD, PhD;<br>Luca Morini, PhD; Matteo Moretti, MD |
| 11:30 AM – 1:00 PM | <b>F88</b> | <b>Forensic Sexual and Gender-Based Violence Prevention and Response:<br/>A Community-Based Approach Pilot</b><br><i>Ibrahim Jibril Adem*;</i> Lemi Tolu, MD                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>F89</b> | <b>Forensic Medicine Practices in Family Medicine in Turkey</b><br><i>Gozde Gokten Kalkanli*;</i> İlkey Kalkanli; Selçuk Çetin                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>F90</b> | <b>An Unusual Plastic Bag Suffocation Case: Insights From a Comprehensive Forensic Investigation</b><br><i>Fausto Licciardello, MD*;</i> Mattia Palmeri, MD; Mario Spano, MD; Walter Pintigaro, MD;<br>Manfredi Rubino, MD; Ginevra Malta, MD, PHF; Valentina Triolo, MD; Antonina Argo   |
| 11:30 AM – 1:00 PM | <b>F91</b> | <b>Filling the Gaps of Medical Records: The Hidden Truth Behind an ABO-Incompatible Transfusion</b><br><i>Gabriele Licciardello, MD*;</i> Francesco Sessa, MS, PhD; Monica Salerno, MD;<br>Cristoforo Pomara, MD                                                                          |
| 11:30 AM – 1:00 PM | <b>F92</b> | <b>Unboxing Grandma—PMI Estimation in an Advanced State of Decomposition: A Case Report</b><br><i>Gabriele Licciardello, MD*;</i> Andrea Vittorio Maria Failla, MD; Marco Torrisi, MD;<br>Fabrizio Vanaria                                                                                |
| 11:30 AM – 1:00 PM | <b>F93</b> | <b>Incised Wounds—Homicide or Suicide? A Case Study</b><br><i>Gabriele Licciardello, MD*;</i> Andrea Vittorio Maria Failla, MD; Pietro Zuccarello, PhD;<br>Maria Paola Pinacchi; Giuseppe Li Rosi, MD; Monica Salerno, MD                                                                 |

# GENERAL

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| 11:30 AM – 1:00 PM | <b>F94</b>  | <b>The Quantitative and Qualitative Analysis of Dye in Fentanyl Tablets Via Ultraviolet Visible Spectroscopy: A Forensic Approach</b><br><i>Charley K. Mitchell, BS*</i> ; Laura Jones; Charlotte Corbett; Jonathon Dumke;<br>Kristin Ceniccola-Campos                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>F95</b>  | <b>Traumatic Brain Injury After Defensive Ball Launcher Use in Law Enforcement Operations</b><br><i>Isabelle Sec, MD*</i> ; Alain Miras, PhD, MD                                                                                                                                                                                                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>F96</b>  | <b>Seasonal Soil Microbial Succession During Carrion Decomposition: Applications for Body Translocation and Postmortem Interval Estimation</b><br><i>Kelly Waters*</i> ; Anthony Grigsby; Bethany Mikles, BSc, MS; Jennifer L. Pechal, PhD;<br>M. Eric Benbow, BS, PhD                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>F97</b>  | <b>An Unusual Accident at Work: Fatally Hit by a Chain</b><br><i>Laura Ambrosi*</i> ; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM;<br>Francesco Carravetta, DM; Antonio Straface, MD; Biagio Solarino                                                                                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F98</b>  | <b>The Evidence for Prosecution of Atrocity Crimes in Ukraine During the Ukraine-Russia Conflict: 2022–Present</b><br><i>Rhianna van Riel-Jameson, BSc*</i> ; Sajeel A. Shah, PhD; Nikolas P. Lemos, PhD                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>F99</b>  | <b>Cannabinoid Hyperemesis Syndrome-Related Death: An Emerging Public Health Threat</b><br><i>Fatima Al-Baqali, MD*</i>                                                                                                                                                                                                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>F100</b> | <b>Unlocking New Insights Into Inorganic Gunshot Residue Analysis Through Single Particle Inductively Coupled Plasma Time-of-Flight Mass Spectrometry (spICP-MS)</b><br><i>Rodrigo D. Heringer*</i> ; James Ranville, MS, PhD; Olga Meili                                                                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>F101</b> | <b>Understanding Volatile Odor Signatures From Entomological Samples</b><br><i>Ana Zoe Monogan, BS*</i> ; Paola A. Prada-Tiedemann, PhD; Joshua Smith, PhD                                                                                                                                                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F102</b> | <b>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</b><br><i>Chu-An Yang*</i> ; Shuo-Ting Fang; Hong-Bin Wang; Chih-Yun Tseng                                                                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F103</b> | <b>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)</b><br><i>Rodrigo D. Heringer*</i> ; Henrique José Ferraz Fabrino, PhD; Rogerio Araujo Lordeiro, MS                                                                                                                                                                                        |
| 11:30 AM – 1:00 PM | <b>F104</b> | <b>Maxillary Sinus Dimensions as Predictive Markers for Age and Sex in Northwest Indian Subjects: An MRI-Based Study</b><br><i>Shubham Thakur, PhD, MSc*</i> ; Jagmahender Singh Sehrawat, PhD                                                                                                                                                                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>F105</b> | <b>A New Frontier in Postmortem Interval (PMI) Estimation: The Assessment of Yellow Bone Marrow Changes Using Dual-Energy Dual-Layer (DECT)</b><br><i>Vincenzo Cianci*</i> ; Cristina Mondello, MD*; Gianluca Tripodi; Alessio Asmundo, MD;<br>Michele Gaeta; Antonino Germana; Maria Cristina Guerrero, Tommaso D'Angelo;<br>Giorgio Ascenti; Annalisa Cracò; Patrizia Gualniera; Lorenzo Tornese; Elena Forzese, MD;<br>Gennaro Baldino, MD; Elvira Ventura Spagnolo; Daniela Sapienza* |
| 11:30 AM – 1:00 PM | <b>F106</b> | <b>The Detection of the Yellow Fever Virus in Human Remains Using Mass Spectrometry-Based Protein Analysis of Dental Pulp</b><br><i>Kyra Miller, BS*</i> ; Kimberlee S. Moran, MSc; Carla Cugini                                                                                                                                                                                                                                                                                          |

# GENERAL

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| 11:30 AM – 1:00 PM | <b>F107</b> | <b>The Challenges and Scope of Iris Biometrics in Forensic Science: A Systematic Review</b><br><i>Sushil Bhatt*</i> ; Jagmahender Singh Sehrawat, PhD                                                                                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>F108</b> | <b>Child Sexual Abuses in Chandigarh, India: Dimensions and Causes</b><br><i>Jagmahender Sehrawat, PhD*</i>                                                                                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F109</b> | <b>Self-Strangulation Using Electrical Cable Ties: A Case Report and Literature Review</b><br><i>Andrea Cioffi, MD*</i> ; Camilla Cecannecchia, MD*; Benedetta Baldari, MD*; Claudia Angela Damato, MD; Isabella Di Marzo, MD; Vittorio Simona, MS                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>F110</b> | <b>Fatal Systemic Aspergillosis in a Puerpera: A Rare Case Report and Review of the Literature</b><br><i>Gennaro Baldino, MD*</i> ; Giovanni Bartoloni; Antonio Cascio; Simona Pellicano, MD; Giorgia Burrascano, MD*; Cristina Mondello, MD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD*                                                                            |
| 11:30 AM – 1:00 PM | <b>F111</b> | <b>Almost to Lose Your Heads: A Case Series of Accidental Internal Decapitation</b><br><i>Andrea Cioffi, MD*</i> ; Camilla Cecannecchia, MD*; Benedetta Baldari, MD*; Cappitelli Jeannet, MD; Vittorio Simona, MS                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>F112</b> | <b>The Contribution of Forensic Sciences in the Study and Monitoring of Mycotoxin Levels for the Protection of Public Health</b><br><i>Matteo Antonio Sacco, MD*</i> ; Cristina Juan, PhD; Ana Juan Garcia, PhD; Luca Calanna, MD*; Maria Cristina Verrina, MD*; Santo Gratterer, PhD, MD; Isabella Aquila, PhD, MD*                                                       |
| 11:30 AM – 1:00 PM | <b>F113</b> | <b>Human Body Dissection and Donation for Research Purposes: An Overview of Current Legislation in European Countries</b><br><i>Camilla Cecannecchia, MD*</i> ; Vittorio Simona, MS*; Andrea Cioffi, MD*                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>F114</b> | <b>The Concealment of Bodies by Charring: A Case Series and Multidisciplinary Approach</b><br><i>Gennaro Baldino, MD*</i> ; Cataldo Raffino, MD; Giorgia Burrascano, MD*; Cristina Mondello, MD; Patrizia Gualniera; Daniela Sapienza, MD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD*                                                                               |
| 11:30 AM – 1:00 PM | <b>F115</b> | <b>A Multidisciplinary Forensic Approach in Two Complex Cold Cases and a Review of the Literature</b><br><i>Gennaro Baldino, MD*</i> ; Daniela Sapienza, MD; Stefano Vanin; Michele Gaeta; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>F116</b> | <b>“I Can’t Find the Remote”: The Ability to Act After a Single Gunshot Wound to the Head</b><br><i>Luca Tomassini*</i> ; Anna Maria Mnto, MD*; Daniele Paolini, MD*; Petrasso Pia Eugenia Ylenia, MD; Costantino Ciallella, MD                                                                                                                                            |
| 11:30 AM – 1:00 PM | <b>F117</b> | <b>The Forensic Point of View of the Serial Murders at the Holmes’ Labyrinth Hotel</b><br><i>Matteo Antonio Sacco, MD*</i> ; Palmo Tavernese; Luca Calanna, MD*; Maria Cristina Verrina, MD; Valerio Riccardo Aquila; Wandamaria Mazzuca*; Elisa Folino; Marinika Salasco; Serena Coda; Santo Gratterer, PhD, MD; Isabella Aquila, PhD, MD*                                |
| 11:30 AM – 1:00 PM | <b>F118</b> | <b>Deaths Due to Suicide by Falling From Bridges: The Role of Architectural Barriers and Video Surveillance Systems</b><br><i>Angela Carbone, MD; Matteo Antonio Sacco, MD*</i> ; 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* |

# GENERAL

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| 11:30 AM – 1:00 PM | <b>F119</b> | <b>The Role of Patient Management in Nursing Homes in the Genesis of Death: Critical Issues in Rehabilitation Programs and Medicolegal Liability Profiles</b><br><i>Luca Calanna, MD*</i> ; <i>Matteo Antonio Sacco, MD*</i> ; <i>Pierluigi Coscarelli, MD</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Antonio Pallante, MD</i> ; <i>Roberto Raffaele*</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i> |
| 11:30 AM – 1:00 PM | <b>F120</b> | <b>Intrafamilial Homicide: A Series of Cases From Southern Italy</b><br><i>Alessandro Feola, MD, PhD*</i> ; <i>Mariavictoria De Simone, MD</i> ; <i>Filomena Casella, MD</i> ; <i>Carmen Sementa, MD</i> ; <i>Pasquale Giugliano, MD</i> ; <i>Alfonso Maiellaro, MD</i> ; <i>Omero Pinto, MD</i> ; <i>Carlo Pietro Campobasso, MD, PhD</i>                                                                                           |
| 11:30 AM – 1:00 PM | <b>F121</b> | <b>To Kill or to Be Killed—A Differential Diagnosis in Sharp Force Injuries to the Neck: A Case Series</b><br><i>Gianluca Piras, MD*</i> ; <i>Anna Maria Manta, MD*</i> ; <i>Vittorio Simona, MS*</i> ; <i>Benedetta Baldari, MD*</i> ; <i>Luigi Cipolloni, MD*</i>                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>F122</b> | <b>The Most Dangerous Games: A Ten-Year Retrospective Review of Homicidal Deaths Associated With Dice and Domino Games in Shelby County, Tennessee</b><br><i>Lyle William Christiansen, MD*</i> ; <i>Danielle Harrell, DO</i> ; <i>Erica Curry, MD</i>                                                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>F123</b> | <b>Artificial Intelligence (AI) -Based Automated Facial Recognition Systems and Contributions of Cone-Beam Computed Tomographs (CBCTs)</b><br><i>Jagmahender Sehrawat, PhD*</i> ; <i>Deeksha Sankhyan</i> ; <i>Shubham Thakur, PhD, MSc</i>                                                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>F124</b> | <b>Do Gender, Age, Body Mass Index, and Height Affect Eye Biometrics in North Indian Adults?</b><br><i>Sushil Bhatt*</i> ; <i>Jagmahender Singh Sehrawat, PhD</i>                                                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>F125</b> | <b>Understanding the Crisis of the Persons Reported Missing in East Tennessee</b><br><i>Kamar Afra, MA*</i> ; <i>Liem Tran, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>F126</b> | <b>Fatal Entrapment Under a Lift-Up Storage Bed: A Rare Case of Accidental Death by Positional Asphyxia</b><br><i>Andrea Cioffi, MD*</i> ; <i>Camilla Cecannecchia, MD*</i> ; <i>Solenne Miriam, MD</i> ; <i>Milone Valentina, MD</i> ; <i>Benedetta Baldari, MD*</i>                                                                                                                                                                |

## Friday—Session I

### Medicolegal Death Investigations

Moderator: Emily Ditto, BA

Co-Moderator: Gulnaz Javan, PhD

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|-------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM | <b>F127</b> | <b>Ready Investigator One: The Use of Computer-Based Simulation Games for Medicolegal Investigation Training and Education</b><br><i>Jennifer E. Dierksen, MD*</i> ; <i>Kolby J. Spiker, MS</i> ; <i>Marissa B. Valencia</i> ; <i>Deanna A. Oleske, MD</i> |
| 8:45 AM – 9:00 AM | <b>F128</b> | <b>Safety Considerations for Medicolegal Death Investigators</b><br><i>Taylor Lowry, BA, BS*</i>                                                                                                                                                           |
| 9:00 AM – 9:15 AM | <b>F129</b> | <b>Medicolegal Death Investigation: Organizational Climate and Job-Related Stress</b><br><i>Julie A. Howe, MBA*</i> ; <i>Steve Clark, PhD*</i> ; <i>Amy M. Hawes, MD</i>                                                                                   |

# GENERAL

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| 9:15 AM – 9:30 AM   | <b>F130</b> | <b>Death Investigation: Factors Associated With Scene Investigation and Autopsy Completion</b><br><i>Jennifer R. Snippen, PhD*</i>                                                                                                                                                                                                                        |
| 9:30 AM – 9:45 AM   | <b>F131</b> | <b>Medicolegal Death Investigation Data Modernization</b><br><i>Margaret Warner, PhD*</i>                                                                                                                                                                                                                                                                 |
| 9:45 AM – 10:00 AM  | <b>F132</b> | <b>Medicolegal Death Investigations: Interactive Mapping of Key Data and Organizations</b><br><i>Nelson A. Santos, MPA, BA*; Jennifer R. Snippen, PhD*; Jeri D. Roper-Miller, PhD</i>                                                                                                                                                                     |
| 10:00 AM – 10:15 AM | <b>F133</b> | <b>Infrastructure-Related Insights About the Medicolegal Death Investigation Community From the Bureau of Justice Statistics' (BJS) Census of Medical Examiner and Coroner Offices (CMEC)</b><br><i>Kelly Keyes, BS*; Kathryn E. Greenwell, BA; Hope M. Smiley-McDonald, PhD; Connor Brooks, MSc, MA; Heather G. Meier, BS; Jeri D. Roper-Miller, PhD</i> |
| 10:15 AM – 10:30 AM |             | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                              |

## Medicolegal Death Investigations and Labs

Moderator: Mark Goff, BA

Co-Moderator: Joseph Finley, PhD

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|---------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:30 AM – 10:45 AM | <b>F134</b> | <b>Standards Development Activities in Medicolegal Death Investigation, Including Disaster Victim Identification</b><br><i>Kelly Keyes, BS*; Michelle Rippy, MFS, EdD</i>                                                                                                                                                                                                                                     |
| 10:45 AM – 11:00 AM | <b>F135</b> | <b>Fostering the Role of Forensic Epidemiologists in Medical Examiner and Coroner Offices: A Collaborative Partnership for Enhanced Public Health Response</b><br><i>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</i> |
| 11:00 AM – 11:15 AM | <b>F136</b> | <b>Modern Morgue Design: How Current Architecture and Technology Help Mortuary Personnel Do Their Job</b><br><i>Denise C. Murmann, DDS*</i>                                                                                                                                                                                                                                                                   |
| 11:15 AM – 11:30 AM | <b>F137</b> | <b>Forensic Laboratory Needs Technology Working Group: The History and an Opportunity</b><br><i>Danielle McLeod-Henning, MFS; Lucas W. Zarwell, MFS*</i>                                                                                                                                                                                                                                                      |
| 11:30 AM – 11:45 AM | <b>F138</b> | <b>Crime Laboratory Quality Assurance Insights From the 2020 Census of Publicly Funded Forensic Crime Laboratories</b><br><i>Jeri D. Roper-Miller, PhD*; Hope M. Smiley-McDonald, PhD; Connor Brooks, MSc, MA; Erin P. Forry, MS</i>                                                                                                                                                                          |
| 11:45 AM – 12:00 PM | <b>F139</b> | <b>Building Laboratory Infrastructure—Recent Findings From the Bureau of Justice Statistics' 2020 Census of Publicly Funded Forensic Crime Laboratories</b><br><i>Connor Brooks, MSc, MA*; Hope M. Smiley-McDonald, PhD; Jeri D. Roper-Miller, PhD; Kathryn E. Greenwell, BA</i>                                                                                                                              |
| 12:00 PM – 1:30 PM  |             | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                                                                                  |

# GENERAL

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## Case Studies I

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Moderator: Erin Worrell, BSc

Co-Moderator: Kayla Wallace, MA

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|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:30 PM – 1:45 PM | <b>F140</b> | <b>The Search for Collateral Deaths Derived From the Events of the 1921 Tulsa Race Massacre</b><br><i>Phoebe R. Stubblefield, PhD*</i> ; <i>Angela Berg, MA, RN</i> ; <i>Robert B. Pickering, PhD</i>                         |
| 1:45 PM – 2:00 PM | <b>F141</b> | <b>The Fernanda Maciel Case: The Results of Forensic Reconstruction</b><br><i>Carlos A. Gutierrez, PhD, MEd*</i>                                                                                                              |
| 2:00 PM – 2:15 PM | <b>F142</b> | <b>Trailside Murder: A Random, Vicious Attack</b><br><i>Kelsie Bryand, MS, BA*</i> ; <i>Andra Lewis-Krick, PhD</i>                                                                                                            |
| 2:15 PM – 2:30 PM | <b>F143</b> | <b>Hanged in the Window of His House: An Accidental Hanging Clarified Only After a Late Scene Examination</b><br><i>Barbara Iga Smyk, DM*</i> ; <i>Cristina Cordeiro</i> ; <i>Joao Pinheiro, MD, PhD</i>                      |
| 2:30 PM – 2:45 PM | <b>F144</b> | <b>A Case Study: Parallels of Intentionally Inflicted Blunt Force Trauma and Blunt Force Trauma in Motor Vehicle Collisions (MVCs)</b><br><i>Emily Ditto, BA*</i> ; <i>Brett Bulington, MDI*</i> ; <i>Carrie Costello, MS</i> |
| 2:45 PM – 3:00 PM | <b>F145</b> | <b>The Occurrence of Natural Deaths in Motor Vehicle Collisions: A Case Study</b><br><i>Emily Ditto, BA*</i> ; <i>Carrie Costello, MS</i>                                                                                     |
| 3:00 PM – 3:15 PM | <b>F146</b> | <b>Visualizing Trends in Subway-Related Fatalities in New York City, NY: 2008–2021</b><br><i>Justin Z. Goldstein, MA*</i> ; <i>Jeremy A. Simmons, MS</i> ; <i>Bradley J. Adams, PhD</i>                                       |
| 3:15 PM – 3:30 PM |             | <b>BREAK</b>                                                                                                                                                                                                                  |

## Case Studies II

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Moderator: Antonel Olckers, PhD

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|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:30 PM – 3:45 PM | <b>F147</b> | <b>The Secret Life of Dorothy</b><br><i>Melanie Armstrong, BA*</i>                                                                                                                                                                                                                                                                                                            |
| 3:45 PM – 4:00 PM | <b>F148</b> | <b>1 . . . 2 . . . 3 . . . Baby Deaths: A Case Involving One Common Denominator</b><br><i>Anita Marie Roman*</i>                                                                                                                                                                                                                                                              |
| 4:00 PM – 4:15 PM | <b>F149</b> | <b>Suicidal Decapitation: Bizarre Ingenuity</b><br><i>Stacey L. Chepren, MFS, MSc*</i>                                                                                                                                                                                                                                                                                        |
| 4:15 PM – 4:30 PM | <b>F150</b> | <b>Beware of People With Pens in Shirt Pockets and Walking With Canes: Regarding Two Medicolegal Autopsies</b><br><i>Fabrice Dedouit, MD, PhD*</i> ; <i>Agathe Bascou, MD</i> ; <i>Ryan Toutin, MD</i> ; <i>Anthony Ramirez, MD</i> ; <i>Manuelo Turkiewicz, MD</i> ; <i>Frederic Savall, MD, PhD</i> ; <i>Fatima Zohra Mokrane, MD, PhD</i> ; <i>Norbert Telmon, MD, PhD</i> |
| 4:30 PM – 4:45 PM | <b>F151</b> | <b>A Story With a Not-So-Ferret-ale Ending: What to Do When OBTI Won't Work</b><br><i>Amanda Fitch, MS*</i>                                                                                                                                                                                                                                                                   |
| 4:45 PM – 5:00 PM | <b>F152</b> | <b>Equestrian Death Investigation Best Practices: An Effort to Support Fatal Rotational Fall Analysis</b><br><i>Stacey L. Chepren, MFS, MSc*</i>                                                                                                                                                                                                                              |

# GENERAL

## Friday—Session II

### Education I

Moderator: Patricia Smith, MS

Co-Moderator: Anita Roman, BS

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|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM   | <b>F153</b> | <b>Does the Delivery Method Determine the Success Rate in an Introduction to Forensic Science Course?</b><br><i>Claire E. Shepard, MS*</i>                                                                                             |
| 8:45 AM – 9:00 AM   | <b>F154</b> | <b>Restructuring the University Forensic Science Seminar: Lessons for New, Current, and Future Instructors</b><br><i>Joe C. Trevino, MS, BS*; Amanda A. Murray, PhD*</i>                                                               |
| 9:00 AM – 9:15 AM   | <b>F155</b> | <b>Active Learning in Forensic Biology</b><br><i>Kristi Bugajski, PhD*</i>                                                                                                                                                             |
| 9:15 AM – 9:30 AM   | <b>F156</b> | <b>The Use of Instructional Strategies in Forensics Education: Results From a National Survey of Post-Secondary Forensic Science Educators</b><br><i>Tamra Legron-Rodriguez, PhD*</i>                                                  |
| 9:30 AM – 9:45 AM   | <b>F157</b> | <b>Courtroom Testimony Training for Professional and Expert Witnesses Through the Lens of a Laboratory Director—Optional or Mandatory: The Saint Lucia Experience</b><br><i>Fernanda Henry, BSc, MSc*; Alfredo Eugene Walker, MBBS</i> |
| 9:45 AM – 10:00 AM  | <b>F158</b> | <b>Investigating Potential Factors That Can Impact Students' Professional Identities in Forensic Science</b><br><i>Abigail Castillo*; Cameron Bechard, BS; Tamra Legron-Rodriguez, PhD; Nicole Lapeyrouse, PhD</i>                     |
| 10:00 AM – 10:15 AM | <b>F159</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                       |
| 10:15 AM – 10:30 AM |             | <b>BREAK</b>                                                                                                                                                                                                                           |

### Education II

Moderator: J. Thomas McClintock, PhD

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| 10:30 AM – 10:45 AM | <b>F160</b> | <b>International Forensics Summer School (IFOSS): Fostering Interdisciplinary Excellence in Forensic Sciences, Including Multimedia Forensics and Biometrics, in Its Second Edition</b><br><i>Sebastiano Battiato, PhD*; Donatella Curtotti; Giovanni Ziccardi</i>                                                                                              |
| 10:45 AM – 11:00 AM | <b>F161</b> | <b>The African Forensic Sciences Academy (AFSA)—Transforming the Forensic Science Landscape in Africa</b><br><i>Antonel Olckers, PhD*; Mehdi Ben Khelil, MD</i>                                                                                                                                                                                                 |
| 11:00 AM – 11:15 AM | <b>F162</b> | <b>An Evaluation of Italian Medical Students' Attitudes and Knowledge Regarding Forensic Medicine: Could This Course Guide the Student in Choosing the Residency Program?</b><br><i>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</i> |
| 11:15 AM – 11:30 AM | <b>F163</b> | <b>A Comparative Forensic Education Via a Study-Abroad Approach: Pedagogical Experiences in the United Kingdom, Scotland, and Canada</b><br><i>John Z. Wang, PhD*</i>                                                                                                                                                                                           |
| 11:30 AM – 11:45 AM | <b>F164</b> | <b>Unveiling Forensic Science Topics for Enhanced Knowledge Discovery</b><br><i>Amir Alipour Yengejeh, MD*; Larry Tang, PhD</i>                                                                                                                                                                                                                                 |

\*Presenting Author

# GENERAL

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|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:45 AM – 12:00 PM | <b>F165</b> | <b>Macro, Meso, Micro: Core Concepts in the Development of Forensic Science</b><br><i>Max M. Houck, PhD*</i>                                                                                                   |
| 12:00 PM – 12:15 PM | <b>F166</b> | <b>Turn RIGHT: A Roadmap to Improving Research and Technology Transition in Forensic Science</b><br><i>Jeri D. Roper-Miller, PhD*; Rebecca L. Shute, MS*; Gabrielle Elise DiEmma, MS; Cody Sorrell, MS, BA</i> |
| 12:15 PM – 12:30 PM | <b>F167</b> | <b>Detecting Illicit Use of AI and Other Cheating in Forensic Student Submissions: Ensuring Justice for All Student Assignments</b><br><i>Stewart Walker, PhD, BSc*</i>                                        |
| 12:30 PM – 1:30 PM  |             | <b>BREAK</b>                                                                                                                                                                                                   |

## Standards

Moderator: Brett Harding, MBA

Co-Moderator: Bhoopesh Kumar Sharma, PhD

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| 1:30 PM – 1:45 PM | <b>F168</b> | <b>The National Institute of Justice Research and Development Program</b><br><i>Lucas W. Zarwell, MFS*</i>                                                                                                                                                                                                                                    |
| 1:45 PM – 2:00 PM | <b>F169</b> | <b>Mass Fatality Response and Disaster Infrastructure Among the Nation's Medical Examiner and Coroner Offices: Data From the 2018 (CMEC)</b><br><i>Micaela A. Ascolese, BA*; Kelly Keyes, BS; Jeri D. Roper-Miller, PhD; Sean Wire, ABD; Hope M. Smiley-McDonald, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 2:00 PM – 2:15 PM | <b>F170</b> | <b>Forensic Science Standards: A Look at Conformity Assessment and Implementation Models in the United States and Abroad</b><br><i>Allison Getz, MS*; Karen K. Reczek*</i>                                                                                                                                                                    |
| 2:15 PM – 2:30 PM | <b>F171</b> | <b>First "One Stop" Sexual Assault Center in Turkey</b><br><i>Sotirios Kalfoglou*; Aslı Ofluoğlu; Zehra Alara Kaplan; Ersi Abaci Kalfoglou</i>                                                                                                                                                                                                |
| 2:30 PM – 2:45 PM | <b>F172</b> | <b>Challenges and Solutions for the Implementation of Standards in the Non-Traditional Forensic Setting</b><br><i>Vincent J. Desiderio, MS*; Steven L. Johnson, BS*; John Paul Jones, BS, MBA; Allison Getz, MS; Mark D. Stolorow, MS, MBA</i>                                                                                                |
| 2:45 PM – 3:00 PM | <b>F173</b> | <b>Reporting on Ethics Committee Approval in Cadaveric-Based Research Publications: An Update of a Five-Year Study</b><br><i>Nasir Muhammad Ahmad, MSc, PhD*; Vina R. Vaswani, MD, PhD</i>                                                                                                                                                    |
| 3:00 PM – 3:15 PM | <b>F174</b> | <b>Current Hiring Requirements and Expectations in Forensic Science: Considerations for FEPAC, OSAC, ASTM, and Employers</b><br><i>Joe C. Trevino, MS, BS*</i>                                                                                                                                                                                |
| 3:15 PM – 3:30 PM | <b>F175</b> | <b>There Are 16,000 Predatory Journals: A Practical Guide to Identifying and Avoiding Deceptive Publications</b><br><i>Jeff Teitelbaum, MD*; Gerald LaPorte, MSFS</i>                                                                                                                                                                         |
| 3:30 PM – 3:45 PM | <b>F176</b> | <b>Artificial Intelligence, the Law, and Forensic Science: New Scenarios and Ethical Implications</b><br><i>Giuseppina Seppini, MSN*; Iolanda Ippolito, MPA</i>                                                                                                                                                                               |
| 3:30 PM – 3:45 PM | <b>F177</b> | <b>Suicides in Prison: Fatalities or Predicted Tragedies?</b><br><i>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</i>                                                                                  |

# JURISPRUDENCE

## Thursday

### The Relationship Between Forensic Science Standards and Justice

Moderator: Lynn Garcia, JD

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| 8:00 AM – 8:30 AM   | <b>G1</b> | <b>The Use of Forensic Science Standards in the Legal Process: An Update</b><br><i>Dana Delger, JD*</i> ; <i>John Paul Jones, BS, MBA*</i>                                                                                                                                |
| 8:30 AM – 9:00 AM   | <b>G2</b> | <b>Standards on the OSAC Registry—Improving Justice for All</b><br><i>Mark D. Stolorow, MS, MBA*</i> ; <i>Vincent Desiderio, Jr., MSFS*</i> ; <i>John Paul Jones, BS, MBA</i> ;<br><i>Allison Getz, MS</i> ; <i>Steven L. Johnson, BS</i>                                 |
| 9:00 AM – 9:30 AM   | <b>G3</b> | <b>The Benefits of a Coherent System of Forensic Standards: From the Classroom to the Courtroom</b><br><i>Vincent J. Desiderio, MS*</i> ; <i>Mark D. Stolorow, MS, MBA*</i> ; <i>John Paul Jones, BS, MBA</i> ;<br><i>Allison Getz, MS</i> ; <i>Steven L. Johnson, BS</i> |
| 9:30 AM – 10:00 AM  | <b>G4</b> | <b>Cross-Examining Experts on Standards and Other Authoritative References</b><br><i>Terry-Dawn Hewitt, JD, LLM*</i>                                                                                                                                                      |
| 10:00 AM – 10:15 AM |           | <b>BREAK</b>                                                                                                                                                                                                                                                              |

### The Critical Roles of Prosecutors and the Judiciary

Moderator: M.J. Menendez, JD

Co-Moderator: Mary Dayton, JD

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| 10:15 AM – 10:45 AM | <b>G5</b> | <b>“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 (<i>this presentation will be given via pre-recorded video</i>)</b><br><i>John Haried, JD*</i> |
| 10:45 AM – 11:15 AM | <b>G6</b> | <b>Using Forensic Science to Speak for a Victim Who Was Unjustly Silenced in Murder</b><br><i>Valeria N. Spencer, JD*</i>                                                                                                                                                                         |
| 11:15 AM – 11:45 AM | <b>G7</b> | <b>A Critical Re-Examination</b><br><i>Barbara P. Hervey, JD*</i>                                                                                                                                                                                                                                 |
| 11:45 AM – 12:15 PM | <b>G8</b> | <b>Why Judges Won’t Be Gatekeepers</b><br><i>Donald E. Shelton, JD, PhD*</i>                                                                                                                                                                                                                      |
| 12:15 PM – 1:15 PM  |           | <b>BREAK</b>                                                                                                                                                                                                                                                                                      |

### Effective Governance and New Resources for Guarding Against Wrongful Conviction

Moderator: Paul Messner, JD

Co-Moderator: Sarah Chu, PhD

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| 1:15 PM – 1:45 PM | <b>G9</b> | <b>Polygraph Testing and Wrongful Conviction</b><br><i>Tania C. Brief*</i> ; <i>Lauren Gottesman*</i> |
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# JURISPRUDENCE

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| 1:45 PM – 2:15 PM | <b>G10</b> | <b>Are Courts Convicting People in Traffic Accident Cases Based on Questionable Data From Crash Data Recorders?</b><br><i>Peter Alexander, PhD*</i> ; <i>Brendan Bourdage, PhD</i> ; <i>John Smith, MSEE, PE</i>                       |
| 2:15 PM – 2:45 PM | <b>G11</b> | <b>Wrongful Convictions Demonstrate the Need for Governance Improvements in Forensic Science</b><br><i>John Morgan*</i>                                                                                                                |
| 2:45 PM – 3:00 PM | <b>G12</b> | <b>The National Association of Forensic Science Boards: A Collaborative Effort for State-Level Forensic Oversight</b><br><i>Leigh M. Tomlin, JD*</i> ; <i>Lynn Garcia, JD</i> ; <i>John Morgan</i> ; <i>Marna L. McLendon, JD, MFS</i> |
| 3:00 PM – 3:20 PM | <b>G13</b> | <b>Preparing for Court: The Research Forensic Library as a New Resource for the Forensic Legal Community</b><br><i>Jeff Teitelbaum*</i> ; <i>Gerald LaPorte, MSFS</i>                                                                  |
| 3:20 PM – 3:30 PM |            | <b>BREAK</b>                                                                                                                                                                                                                           |

## Statistical Concepts, Emerging Technologies, and Our Collective Duty to Correct

Moderator: Terri Rosenblatt, JD

Co-Moderator: Akilah Mance

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| 3:30 PM – 4:00 PM | <b>G14</b> | <b>The Real Action at Court Has Always Been Activity</b><br><i>Tim Kalafut, PhD*</i>                                                    |
| 4:00 PM – 4:30 PM | <b>G15</b> | <b>Presumption of Innocence, Probable Cause, and Prior Probability—Bayes Meets Due Process</b><br><i>Michael J. Salyards, PhD, MFS*</i> |
| 4:30 PM – 5:00 PM | <b>G16</b> | <b>Preventing and Correcting DNA Errors and Wrongful Convictions</b><br><i>Greg Hampikian, PhD*</i>                                     |
| 5:00 PM – 5:30 PM | <b>G17</b> | <b>Forensic Genetic Genealogy and the Court System—Where Are We Going?</b><br><i>Colleen M. Fitzpatrick, PhD*</i>                       |

## Friday

### Poster Session

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| 11:30 AM – 1:00 PM | <b>G18</b> | <b>The Incidence of Expert Testimony Within Federal Sentences in the Criminal Justice System of Mexico</b><br><i>Fernanda Lopez-Escobedo, PhD*</i> ; <i>Zoraida García-Castillo, PhD</i> ; <i>Karla I. Vázquez-Barrera, JD</i> ; <i>N. Sofía Huerta-Pacheco, PhD</i>                                                         |
| 11:30 AM – 1:00 PM | <b>G19</b> | <b>Gender Inequality and Medical Malpractice: A Sneaky Oversight</b><br><i>Julia Lazzari, MD*</i> ; <i>Naomi Iacoponi, MD*</i> ; <i>Ilaria Marcacci, MD</i> ; <i>Chiara Casula, MD</i> ; <i>Rebecca Pieretti, MD</i> ; <i>Arianna Baronti, MD</i>                                                                            |
| 11:30 AM – 1:00 PM | <b>G20</b> | <b>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</b><br><i>Carla Occhipinti, MD*</i> ; <i>Naomi Iacoponi, MD*</i> ; <i>Julia Lazzari, MD</i> ; <i>Giacomo Visi, MD</i> ; <i>Benedetta Nardi, MD</i> |

# JURISPRUDENCE

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| 11:30 AM – 1:00 PM | <b>G21</b> | <b>Post-Conviction DNA Testing: Annual Summary of an Innocence Project and University Collaboration to Identify and Evaluate Post-Conviction Cases</b><br><i>Katherine A. Roberts, PhD*</i> ; <i>Paula Mitchell, JD</i> ; <i>Paige McGrail, JD</i> ; <i>Eliza Haney, JD</i> ; <i>Ayesha Hussain, JD</i> ; <i>Hilary Morman, JD</i> ; <i>Mehul Anjaria, BS, MS</i> |
| 11:30 AM – 1:00 PM | <b>G22</b> | <b>Workplace Violence Against Health Care Workers: An Umbrella Review of Systematic Reviews and Meta-Analyses</b><br><i>Giovanni Aulino, MD*</i> ; <i>Flavia Beccia, MD</i> ; <i>Maria Francesca Rossi, MD</i> ; <i>Carlotta Amantea, MD</i> ; <i>Francesca Cittadini, PhD</i> ; <i>Antonio Oliva, PhD</i>                                                        |
| 11:30 AM – 1:00 PM | <b>G23</b> | <b>The Positive Impact of Clinical Forensic Medicine Units on Profiles of Medicolegal Cases for Insight and Reviewing Strategies to Plan Against Crime</b><br><i>Rajender Kumar, MBBS, MD*</i> ; <i>Mukta Kumar, MBBS, MD*</i> ; <i>Munish Sharma, MBBS MD</i> ; <i>Umesh Modi, MBBS, MS</i> ; <i>Nitika Saini, MBBS, MD</i>                                      |
| 11:30 AM – 1:00 PM | <b>G24</b> | <b>The Impact of Post-Traumatic Stress Disorder (PTSD) on Those Seeking Asylum</b><br><i>Hasna M. Sheikh, LLM*</i> ; <i>Elsbeth Guild</i> ; <i>Nicholas P. Lemos, PhD</i>                                                                                                                                                                                         |
| 11:30 AM – 1:00 PM | <b>G25</b> | <b>Legal Tools to Advocate for Forensic Standards in Missing Persons' Cases</b><br><i>Maria Nectaria Antoniou, LLM, MSt*</i> ; <i>Vaughn Rossouw, LLM, LLB*</i> ; <i>Stephen A. Fonseca, BTech</i> ; <i>Pierre Guyomarc'h, PhD</i>                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>G26</b> | <b>Guidelines for the Judicial Assessment of Expert Evidence in the Mexican Legal System</b><br><i>Zoraida García-Castillo, PhD*</i> ; <i>Fernanda Lopez-Escobedo, PhD</i> ; <i>Anahy Rodriguez-González, PhD</i>                                                                                                                                                 |
| 11:30 AM – 1:00 PM | <b>G27</b> | <b>Exploring the Contours of Bridging the Gap Between Forensic Science and Law in India</b><br><i>Pancham Preet Kaur, LLM*</i>                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>G28</b> | <b>Challenging Scientists: A Three-Tier System for Educating Lawyers in Forensic Techniques</b><br><i>Dinkar Vr, LLM, PHD*</i>                                                                                                                                                                                                                                    |

## Understanding Our Limits: Study Design, Black Boxes, and the Trouble With Inconclusives

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Moderator: Meredith Coon

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| 8:00 AM – 8:30 AM  | <b>G29</b> | <b>An FBI Laboratory Decision Analysis “Black Box” Studies in Pattern Evidence Examinations</b><br><i>Gene Peters*</i>                                                                                                                                                                                                                                                 |
| 8:30 AM – 9:00 AM  | <b>G30</b> | <b>Error Rate Studies: The Good, the So-So, and the Unacceptable</b><br><i>Kori Khan, MD*</i> ; <i>Alicia Laura Carriquiry, PhD</i>                                                                                                                                                                                                                                    |
| 9:00 AM – 9:30 AM  | <b>G31</b> | <b>Inconclusive Decisions and Error Rates in Forensic Science</b><br><i>Henry J. Swofford, MSFS, PhD*</i> ; <i>Steven Lund, PhD</i> ; <i>Hariharan Iyer, PhD</i> ; <i>John M. Butler, PhD</i> ; <i>Johannes Soons, PhD</i> ; <i>Robert M. Thompson, MFS, BS</i> ; <i>Vincent Desiderio, Jr., MSFS</i> ; <i>John Paul Jones, BS, MBA</i> ; <i>Robert Ramotowski, MS</i> |
| 9:30 AM – 10:15 AM | <b>G32</b> | <b>A New Black Box Study—Part I: The Accuracy of Latent Print Examiners: What More Do We Know in a Decade?</b><br><i>R. Austin Hicklin, PhD*</i> ; <i>Nicole M. Richetelli, PhD*</i> ; <i>AshLee Taylor, MS*</i> ; <i>JoAnn Buscaglia, PhD*</i>                                                                                                                        |

# JURISPRUDENCE

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| 10:15 AM – 10:45 AM | <b>G33</b> | <b>A New Black Box Study—Part II: Bullets (NIST/Noblis)</b><br><i>R. Austin Hicklin, PhD*</i> ; <i>Nicole M. Richetelli, PhD</i> ; <i>Melissa Taylor, MS</i> ;<br><i>Robert Thompson, MS</i> |
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| 10:45 AM – 11:00 AM | <b>BREAK</b> |
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## The Role of Medical Professionals and Digital Multimedia Evidence in Ensuring Justice

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Moderator: Nicolas Hughes, JD, MS

Co-Moderator: Leigh Tomlin, JD

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| 11:00 AM – 11:30 AM | <b>G34</b> | <b>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</b> <i>Allison Lewis, JD, BA*</i> ;<br><i>Andrew Baker, MD*</i> |
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| 11:30 AM – 12:00 PM | <b>G35</b> | <b>Misleading Sexual Assault Nurse Examiner (SANE) Testimony in Child Sexual Abuse Cases</b><br><i>Nancy R. Downing, PhD, RN*</i> |
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| 12:00 PM – 12:30 PM | <b>G36</b> | <b>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</b><br><i>Joseph Levi White, PhD*</i> |
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| 12:30 PM – 1:45 PM | <b>BREAK</b> |
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## History and Current State of DNA Mixture Interpretation (for Lawyers)

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Moderator: Dawn Boswell, JD

Co-Moderator: Jarrah Kennedy, MSFS

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| 1:45 PM – 2:15 PM | <b>G37</b> | <b>DNA Mixture Interpretation: A History of Field and NIST Foundation Study Findings</b><br><i>John M. Butler, PhD*</i> |
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| 2:15 PM – 3:15 PM | <b>G38</b> | <b>DNAmix 2021: Inter-Laboratory Variation in the Interpretation of DNA Mixtures</b><br><i>R. Austin Hicklin, MA, BA*</i> ; <i>Jonathan Davoren, MSc*</i> ; <i>Nicole M. Richetelli, PhD</i> ;<br><i>Robert Bever, PhD</i> |
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| 3:15 AM – 3:30 PM | <b>BREAK</b> |
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## Human Factors in Forensic DNA Interpretation: Strategies for Effective Implementation

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Moderator: Dawn Boswell, JD

Co-Moderator: Jarrah Kennedy, MSFS

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| 3:30 PM – 4:00 PM | <b>G39</b> | <b>An Overview of the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation Report</b><br><i>Melissa Taylor*</i> ; <i>Nikola Osborne, PhD*</i> |
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| 4:00 PM – 4:45 PM | <b>G40</b> | <b>Improving Forensic DNA Interpretation Protocols and Reports Through the Implementation of Human Factors Recommendations</b><br><i>Britton Morin, MSFS*</i> ; <i>Nikola Osborne, PhD</i> |
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# ODONTOLOGY

## Thursday

### Poster Session

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| 11:30 AM – 1:00 PM | <b>H1</b> | <b>A Pilot Study on Postmortem Determination of Drug Abuse on Dental Tissues</b><br><i>Ilenia Bianchi, DMD*</i> ; <i>Marta Cippitelli, PhD</i> ; <i>Erika Buratti, PhD</i> ; <i>Gianmario Mietti, PhD</i> ; <i>Alice Cerioni, PhD</i> ; <i>Roberto Scendoni, PhD</i> ; <i>Rino Frolidi, MSc</i> ; <i>Vilma Pinchi, PhD</i> ; <i>Mariano Cingolani, MD, MSc</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation) |
| 11:30 AM – 1:00 PM | <b>H2</b> | <b>An Overview and Evaluation of Forensic Dentistry Cases With Trauma Damage and Bone Fractures</b><br><i>Huseyin Afsin</i> ; <i>Gulnaz T. Javan, PhD*</i>                                                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>H3</b> | <b>Justice for the Vanished but Not Missing</b><br><i>Elizabeth Ruth Smith, DDS*</i>                                                                                                                                                                                                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>H4</b> | <b>A Picture Reveals the Truth!</b><br><i>Megha Shah, DDS*</i>                                                                                                                                                                                                                                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>H5</b> | <b>Postmortem Histological Changes of Dental Pulp for Postmortem Interval Estimation: A Pilot Study</b><br><i>Ilenia Bianchi, DMD*</i> ; <i>Ana Margarida Rodrigues, MSc</i> ; <i>Diana Augusto, MSc</i> ; <i>João Aquino, PhD</i> ; <i>Isabel Fonseca, MD, PhD</i> ; <i>Vilma Pinchi, PhD</i> ; <i>Cristiana Palmela Pereira, MSc</i> ; <i>PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)            |
| 11:30 AM – 1:00 PM | <b>H6</b> | <b>The Forensic Anthropological Significance of Dental Calculus Deposits as Proxy for Identity of the Host and the Oral Microbiota: A Systematic Review</b><br><i>Jagmahender Sehrawat, PhD*</i> ; <i>Niraj Rai, PhD</i>                                                                                                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>H7</b> | <b>The Use of the Disaster Victim Identification (DVI) Method for a Mass Casualty Bus Crash in Manitoba, Canada</b><br><i>Noriko B. Boorberg, DMD, MEd*</i> ; <i>Trenna Reeve, DMD</i> ; <i>Carla Penner, DDS</i>                                                                                                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>H8</b> | <b>Color Change in Deciduous and Permanent Enamel and Dentin Due to Burning</b><br><i>Michal Peer, MSc*</i> ; <i>Rachel Sarig, DMD, PhD</i>                                                                                                                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>H9</b> | <b>Evaluating the Relationship Between Various Oral Pathological Conditions and the Persistence of Lip Prints</b><br><i>Jagmeet Kaur, BSc, MSc*</i> ; <i>Mukesh Kumar K. Thakar, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                                                       |

### To ID or Not to ID ... Is This a Question?

Moderator: Ray Miller, DDS

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|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM | <b>H10</b> | <b>The <math>\delta^{18}\text{O}</math> Values as Chemical Signatures of Geo-Locality of Ajnala Skeletal Remains: A Forensic Odontological Study</b><br><i>Jagmahender Sehrawat, PhD*</i> ; <i>Niraj Rai, PhD</i>               |
| 8:45 AM – 9:15 AM | <b>H11</b> | <b>Investigating the Influence of Sex and Ethnicity on Human Identification Using Palatal Scans</b><br><i>Botond Simon, DMD*</i> ; <i>Aida Roudgari</i> ; <i>Akos Mikolicz</i> ; <i>Arvin Irani Shahbazi</i> ; <i>Janos Vag</i> |

# ODONTOLOGY

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|---------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:15 AM – 9:30 AM   | <b>H12</b> | <b>A Colorimetric Study of Burnt Teeth as a Diagnostic Tool to Aid in Forensic Dental Identification</b><br><i>Emilio Nuzzolese, DDS, PhD*</i> ; <i>Matteo Aliberti, DDS</i> ; <i>Lucia Tattoli, MD, PhD</i> ;<br><i>Giancarlo Di Vella, MD, PhD</i>      |
| 9:30 AM – 9:45 AM   | <b>H13</b> | <b>A Multinational Classification of Dental Resin Composites for Forensic Purposes</b><br><i>Emilio Nuzzolese, DDS, PhD*</i> ; <i>Davide Bosio, MD</i> ; <i>Mariagrazia Putzu, MD</i> ;<br><i>Giancarlo Di Vella, MD, PhD</i>                             |
| 9:45 AM – 10:00 AM  | <b>H14</b> | <b>A Radiographic Field Guide to Modern Dental Restorative Materials</b><br><i>Elif D. Aksoylu, DMD, MPH*</i>                                                                                                                                             |
| 10:00 AM – 10:15 AM | <b>H15</b> | <b>Artificial Intelligence-Driven Dental Comparison for Human Identification in Mass Disasters</b><br><i>Guillermo Ramírez*</i> ; <i>Antonio David Villegas, MSc, BS</i> ; <i>Tzipi Kahana</i> ; <i>Óscar Cordón</i> ;<br><i>Oscar Ibáñez Panizo, PhD</i> |
| 10:15 AM – 10:30 AM | <b>H16</b> | <b>Prehistoric Therapeutic Dentistry in the Mid-Atlantic United States: The Use of Multi-Modal Imaging on Ancient Dental Specimens</b><br><i>John B. Nase, DDS*</i> ; <i>Dana Kollmann, PhD*</i>                                                          |
| 10:30 AM – 10:45 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                              |

## Identification Plus

Moderator: Sarah Friend, DDS

Co-Moderator: Andrew Stewart

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|---------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:45 AM – 11:00 AM | <b>H17</b> | <b>Dental Identification After an Arson Attack</b><br><i>Camilla George, MSc, LLM*</i>                                                                                                                                                                                                                                       |
| 11:00 AM – 11:15 AM | <b>H18</b> | <b>Developing an Animal Model for Investigating Tissue Deterioration of the Palate by Intraoral Scanner</b><br><i>Janos Vag*</i> ; <i>Sandor Mikó</i> ; <i>Arvin Irani Shahbazi</i>                                                                                                                                          |
| 11:15 AM – 11:30 AM | <b>H19</b> | <b>The Establishment of a Provincial Identification Unit and Its Promising Results</b><br><i>Corinne D'Anjou, DMD*</i>                                                                                                                                                                                                       |
| 11:30 AM – 11:45 AM | <b>H20</b> | <b>The Potential of Smile Photographs and a PM Intraoral Scanner for Dental Identification</b><br><i>Rosario Guerra Martí*</i> ; <i>Emilio Nuzzolese, DDS, PhD*</i> ; <i>Andrea Valsecchi, PhD</i> ;<br><i>Oscar Ibáñez Panizo, PhD</i> ; <i>Inmaculada Alemán, PhD</i> ; <i>Sven Benthous</i> ; <i>Domenico Dellaia, MD</i> |
| 11:45 AM – 12:00 PM | <b>H21</b> | <b>The Production of Dental Remains Replicas With 3D Modeling</b><br><i>Robin A. Ainsworth, DDS, MS*</i> ; <i>Daniel Sierra</i> ; <i>James Pizzini, BS</i> ; <i>Charles DeFreest, DDS</i> ;<br><i>Mario Ruybal</i>                                                                                                           |
| 12:00 PM – 1:15 PM  |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                 |

# ODONTOLOGY

## Still Biting After All These Years ...

Moderator: Cristiana Palmela Pereira, PhD

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|-------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:15 PM – 1:30 PM | <b>H22</b> | <b>Odontometrics and Artificial Intelligence: A Comparative Study for Best Prediction of Facial Geometry in Medicolegal Cases</b><br><i>Nandini Chitara, MSc*; Rakesh Meena, MSc; Ankita Guleria, MSc; Kewal Krishan, PhD</i> |
| 1:30 PM – 1:45 PM | <b>H26</b> | <b>Insights From Wrongful Convictions Related to Bitemark Analysis</b><br><i>John Morgan*</i>                                                                                                                                 |
| 1:45 PM – 2:00 PM | <b>H24</b> | <b>The Evolution of the American Board of Forensic Odontology Standards and Guidelines for Evaluating Bitemarks</b><br><i>Richard H. Fixott, DDS*</i>                                                                         |
| 2:00 PM – 2:15 PM | <b>H25</b> | <b>Bitemarks: Can We Agree?</b><br><i>James F. Goodrich, BDS*; Mark Eilers, DMD</i>                                                                                                                                           |
| 2:15 PM – 2:30 PM | <b>H23</b> | <b>Advancing Forensic Odontology Standards: Insights and Updates</b><br><i>Kenneth W. Aschheim, DDS*</i>                                                                                                                      |
| 2:30 PM – 2:45 PM | <b>H27</b> | <b>Expert Witness Testimony and the Standard of Care Involving Swallowed Dental Objects</b><br><i>Raymond G. Miller, BA, DDS*</i>                                                                                             |
| 2:45 PM – 3:00 PM | <b>H28</b> | <b>Justice for Mariyah: Bitemark Analysis and the Power of Exclusion</b><br><i>Grace Chung, DDS*</i>                                                                                                                          |
| 3:00 PM – 3:45 PM |            | <b>BREAK</b>                                                                                                                                                                                                                  |

## How Old Are You Now?

Moderator: Lindsay Spears, DDS

Co-Moderator Elif Aksoylu

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|-------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:45 PM – 4:00 PM | <b>H29</b> | <b>The Good, Bad, and Ugly of Bitemarks</b><br><i>Christy Chang*; Shirley Lewis, BDS, MSD</i>                                                                                                                                                                                                                                                            |
| 4:00 PM – 4:15 PM | <b>H30</b> | <b>Dental Age Assessment Through a Learning Machine Approach</b><br><i>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</i><br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 4:15 PM – 4:30 PM | <b>H31</b> | <b>The Age Assessment Procedure and Results of the Age Assessment: Where Is the Dental Age Assessment?</b><br><i>Cristiana Palmela Pereira, MSc; PhD*</i>                                                                                                                                                                                                |
| 4:30 PM – 4:45 PM | <b>H32</b> | <b>The Performance of Different Dental Age Estimation Methods on Saudi Children</b><br><i>Sakher AlQahtani, PhD*</i>                                                                                                                                                                                                                                     |
| 4:45 PM – 5:00 PM | <b>H33</b> | <b>A Comparison of Third Molar Development Between Hispanic Populations in Two Different Geographical Locations in the United States</b><br><i>Jayakumar Jayaraman, BDS, MDS, MS, PhD*</i>                                                                                                                                                               |

# ODONTOLOGY

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## Friday

### Last and Never Least. . .

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Moderator: Mary Speicher, DMD

Co-Moderator: Ben Amini

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|---------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:45 AM – 9:00 AM   | <b>H35</b> | <b>A 3D CBCT Method for Adult Age Estimation Based on Pulp Chamber Narrowing of Central Incisors</b><br><i>Ilenia Bianchi, DMD*</i> ; <i>Giulia Vitale, MD, DDS</i> ; <i>Ugo Santosuosso, MSc</i> ; <i>Lorella Bonaccorsi, PhD</i> ; <i>Francesco Pradella, MD, DDS</i> ; <i>Martina Focardi, MD</i> ; <i>Vilma Pinchi, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 9:00 AM – 9:15 AM   | <b>H36</b> | <b>A Dental Age Comparison of North Indian Children and Adolescents</b><br><i>Deeksha Sankhyan*</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                                                                                                                             |
| 9:15 AM – 9:30 AM   | <b>H37</b> | <b>Dental Assessment of Unaccompanied Refugees: A Mediterranean Perspective</b><br><i>Mariagrazia Marisei, MD*</i> ; <i>Pierpaolo Di Lorenzo, MD</i> ; <i>Anita Sammarco, MD</i> ; <i>Gaetano Di Donna, MD</i> ; <i>Claudia Casella, JD</i> ; <i>Fabio Policino</i> ; <i>Emanuele Capasso, MD</i> ; <i>Massimo Niola, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)   |
| 9:30 AM – 10:00 AM  | <b>H38</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                             |
| 10:00 AM – 10:15 AM | <b>H39</b> | <b>When the Biter Leaves a Tooth Behind</b><br><i>Daniel T. Hines*</i> ; <i>Howard Harcke, MD</i>                                                                                                                                                                                                                                                                                            |

# PATHOLOGY/BIOLOGY

## Wednesday

### Poster Session

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|--------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | I1  | <b>Fatal Pesticide Ingestion Involving Boric Acid: A Case Report and Review of the Literature</b><br><i>Ashley Lukefahr, MD*</i>                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | I2  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | I3  | <b>A Sudden Unexpected Death From a Rupture of the Pulmonary Artery in Patients With Systemic Autoimmune Diseases</b><br><i>Sharon Duzioni, MD*; Donna Gherardi, MD; Paolo Nozza, MD; Francesco Ventura, MD, PhD</i>                                                                                                                |
| 11:30 AM – 1:00 PM | I4  | <b>An 11-Year Review of Fall Deaths Due to Head Trauma Reported in Shelby County, TN</b><br><i>Madison Benton, BS*; Erica Curry, MD</i>                                                                                                                                                                                             |
| 11:30 AM – 1:00 PM | I5  | <b>Cause and Manner of Death in New Mexico's Unhoused Population, 2014–2018</b><br><i>Elyssa Glassheim, MD*; Lauren Dvorscak, MD; Sarah Lathrop, DVM, PhD; Garon Bodor, MS; Neil Greene, PhD</i>                                                                                                                                    |
| 11:30 AM – 1:00 PM | I6  | <b>Under Pandemic Pressure: A Four-Year Review of Suicidal Deaths in Shelby County, Tennessee, With Emphasis on the Effect of COVID-19</b><br><i>Jacob Williams*; Scott Collier, DM; Danielle Harrell, DO</i>                                                                                                                       |
| 11:30 AM – 1:00 PM | I7  | <b>A Case of Death Resulting From an Unrecognized Wilms Tumor in a 4-Year-Old Child</b><br><i>Isabella Caristo, MD*; Rosario Barranco, MD, PhD; Paolo Nozza, MD; Francesco Ventura, MD, PhD</i>                                                                                                                                     |
| 11:30 AM – 1:00 PM | I8  | <b>Considerations of Decedent General Health Parameters During Determination of Cause of Death in Persons Abusing Substances</b><br><i>Clare Hartman*; Chandler M. Grant, MS; Michael W. Johnson, MD, PhD</i>                                                                                                                       |
| 11:30 AM – 1:00 PM | I9  | <b>Fat Embolism Syndrome in a Patient With Osteogenesis Imperfecta: A Textbook Case</b><br><i>Francesco Carravetta, DM*; Marcello Benevento, MD; Cristina Caterino, DM; Simona Nicoli, DM; Antonio Straface, MD; Laura Ambrosi; Biagio Solarino</i>                                                                                 |
| 11:30 AM – 1:00 PM | I10 | <b>Ligature Strangulation Utilizing Cable Ties: An Unusual Means of Suicide in Italy</b><br><i>Roberta Mercuri, MD*; Valentina Calamano, MD; Federica Gamba, MD; Francesco Ventura, MD, PhD; Camilla Tettamanti, MD, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Poster Presentation)</i>                                  |
| 11:30 AM – 1:00 PM | I11 | <b>Chasing Euphoria: When Butane Inhalation Leads to Death</b><br><i>Naomi Iaconi, MD*; Julia Lazzari, MD; Carla Occhipinti, MD; Ilaria Marcacci, MD; Aniello Maiese, PhD; Fabio Stefanelli, PhD</i>                                                                                                                                |
| 11:30 AM – 1:00 PM | I12 | <b>Acute or Chronic Myocarditis? Or Is It Budd-Chiari Syndrome? A Peculiar Case of Multi-Organ Failure in a Subject With SARS-CoV2 Infection</b><br><i>Eleonora Mezzetti, MD*; Matteo Leoni, MD; Giulia Berneschi, MD; Arianna Baronti, MD; Naomi Iaconi, MD*; Marco Di Paolo, MD</i>                                               |
| 11:30 AM – 1:00 PM | I13 | <b>Anosmia and COVID-19: The Search for the Virus in the Brain Through Immunohistochemical Investigations With the Anti-SARS-CoV-2 Antibody</b><br><i>Stefania De Simone, MD*; Maria Antonella Bosco, MD; Giacani Elena, MD; Gurgoglione Giovanni, MD; Isabella Di Marzo, MD; Raffaele La Russa, MD, PhD*; Luigi Cipolloni, MD*</i> |

# PATHOLOGY/BIOLOGY

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| 11:30 AM – 1:00 PM | I14 | <b>Oxidative Stress Markers in the Human Brain and Placenta May Reveal the Timing of Hypoxic-Ischemic Injury: Evidence From an Immunohistochemical Study</b><br><i>Benedetta Baldari, MD*; Margherita Neri, MD PhD*; Giacani Elena, MD; Stefania De Simone, MD*; Rinaldi Giuseppe, MD; Vittorio Simona, MS*; Luigi Cipolloni, MD*</i>                                             |
| 11:30 AM – 1:00 PM | I15 | <b>Starvation-induced Hepatocyte Changes: Light and Electron Microscopy Findings in Two Pediatric Homicide Cases</b><br><i>Maria Elisa Smith, MD*; Zabiullah Ali, MD</i>                                                                                                                                                                                                          |
| 11:30 AM – 1:00 PM | I16 | <b>Macrophage Activation Syndrome Following Administration of the ChAdOx1 nCoV-19 Vaccine: A Case Study</b><br><i>Corinne La Spina*; Giuseppe Davide Albano; Giuliana Malandrino, MD; Giovanni Cannella; Dario Scaglione, MD; Emiliano Maresi; Stefania Zerbo</i>                                                                                                                 |
| 11:30 AM – 1:00 PM | I17 | <b>A Delayed Traumatic Intracranial Hemorrhage With Antithrombotic Medication: A Report of an Autopsy Case and Verification in an Animal Model</b><br><i>Kazuhiko Kibayashi, MD*</i>                                                                                                                                                                                              |
| 11:30 AM – 1:00 PM | I18 | <b>Delayed Traumatic Rupture of the Spleen in a Patient with Mantle Cell Non-Hodgkin Lymphoma: Histopathological and Immunohistochemistry Aspects</b><br><i>Giuseppe Davide Albano; Vanessa Milazzo, MD; Mario Spano, MD*; Maria Puntarello; Emiliano Maresi; Stefania Zerbo; Antonina Argo</i>                                                                                   |
| 11:30 AM – 1:00 PM | I19 | <b>Combined Mechanical Asphyxia by Strangulation and Immobilization of the Chest in a Case of Matricide</b><br><i>Francesca Consalvo, MD*; Matteo De Simone*; Martina Padovano, MD; Matteo Scopetti, MD; Pasquale Ardovino, MD; Alessandro Santurro, MD, PhD*</i>                                                                                                                 |
| 11:30 AM – 1:00 PM | I20 | <b>Unknown Heart Disease and Sudden Cardiac Death: The Role of Postmortem Investigations</b><br><i>Matteo Antonio Sacco, MD*; Margherita Sgroi, MD; Luca Calanna, MD; Maria Cristina Verrina, MD; Giulio Pulpito, MD*; Alessandro Pasquale Tarallo, MD*; Wandamaria Mazzuca; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*</i>                                           |
| 11:30 AM – 1:00 PM | I21 | <b>Sudden Cardiac Death in a Man With a Functioning Implantable Cardioverter-Defibrillator</b><br><i>Federica Ministeri, MD*; Federico Privitera, MD; Grazia Giulia Pantè; Cristoforo Pomara, MD</i>                                                                                                                                                                              |
| 11:30 AM – 1:00 PM | I22 | <b>Unraveling Unusual Mediastinal Anatomy Alterations Through Postmortem CT and Multiparametric 3-D Reconstructions: A Case Series of Major Trauma</b><br><i>Mauro Midiri*; Giuseppe Davide Albano; Corinne La Spina; Maria Puntarello; Valeria Giglio, MD; Erika Serena Sorrentino; Giuseppe Io Re; Antonina Argo</i>                                                            |
| 11:30 AM – 1:00 PM | I23 | <b>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</b><br><i>Giovanni Gurgoglione, MD*; Maria Antonella Bosco, MD*; Giuseppe Rinaldi, MD*; Stefania De Simone, MD; Elena Giacani, MD; Luigi Cipolloni, MD*; Francesco Prari, MD, PhD*</i> |
| 11:30 AM – 1:00 PM | I24 | <b>The Role of Radiological Investigations and the Postmortem Laboratory in an Enigmatic Suicide Case: Between Doubts and Certainties</b><br><i>Isabella Aquila, PhD, MD*; Matteo Antonio Sacco, MD*; Alessandro Schettini; Valerio Riccardo Aquila; Maria Cristina Verrina, MD; Luca Calanna, MD*; Felice Francesco Carabellese, MD</i>                                          |

# PATHOLOGY/BIOLOGY

## Thursday

### Poster Session

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|--------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | I25 | <b>A Case of Dismemberment in Italy: A Multidisciplinary Approach to Put the Pieces Together</b><br><i>Luca Diani, MD*</i> ; <i>Michele Carpinteri, MD</i> ; <i>Laura Camilla Gasparini, MD</i> ; <i>Giada Rovito, MD</i> ; <i>Irene Pradelle, MD</i> ; <i>Enrica Callegari, LM</i> ; <i>Rosa M. Gaudio, MD, PhD</i> ; <i>Giovanni Cecchetto, MD, PhD</i> ; <i>Margherita Neri, MD PhD</i> ; <i>Omar Bonato, MD</i>                         |
| 11:30 AM – 1:00 PM | I26 | <b>A Rare Case of Homicide by Air Rifle</b><br><i>Joshua Smith, PhD*</i> ; <i>Tiffany Hollenbeck, DO</i>                                                                                                                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | I27 | <b>The Cerulean Man: A Case of Argyria</b><br><i>Alfonzo Halfin*</i> ; <i>Todd M. Luckasevic, DO</i> ; <i>Karl E. Williams, MD, NPH</i>                                                                                                                                                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | I28 | <b>Analysis of a Case of Neonatal Precipitation: Feticide or Infanticide?</b><br><i>Francesca Consalvo, MD*</i> ; <i>Matteo De Simone*</i> ; <i>Pasquale Ardovalo, MD</i> ; <i>Martina Padovano, MD</i> ; <i>Matteo Scopetti, MD</i> ; <i>Alessandro Santurro, MD, PhD*</i>                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | I29 | <b>Death Due to Aggression by Maremman Dogs: The Role of Forensic Sciences in the Reconstruction of the Case</b><br><i>Matteo Antonio Sacco, MD*</i> ; <i>Francesco Maria Galassi</i> ; <i>Elena Varotto, PhD</i> ; <i>Laura Landini, MA</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Luca Calanna, MD</i> ; <i>Wandamaria Mazzuca*</i> ; <i>Roberto Raffaele*</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i> |
| 11:30 AM – 1:00 PM | I30 | <b>A Case of Fatal Hemorrhage: Natural or Violent Death? A Deceptive Crime Scene</b><br><i>Gennaro Baldino, MD*</i> ; <i>Cristina Mondello, MD</i> ; <i>Giorgia Burrascano, MD*</i> ; <i>Domenicantonio Iannello, MD</i> ; <i>Alessio Asmundo, MD</i> ; <i>Elvira Ventura Spagnolo, MD*</i>                                                                                                                                                 |
| 11:30 AM – 1:00 PM | I31 | <b>Transorbital Orbitocranial Penetrating Injuries (TOPI): A Report of Two Cases</b><br><i>Tancredi Dino Mario, MD</i> ; <i>Bibbò Roberta, MD*</i> ; <i>Benedetta Baldari, MD</i> ; <i>Maria Antonella Bosco, MD*</i> ; <i>Carpano Francesco, MD</i> ; <i>Moro Diego, MD</i> ; <i>Luigi Cipolloni, MD*</i>                                                                                                                                  |
| 11:30 AM – 1:00 PM | I32 | <b>Complex Suicide by Gunshot and Hanging</b><br><i>Eugenio Jacopo Piero Gallotti, MD*</i> ; <i>Dario Galatone</i> ; <i>Chiara Franzetti, MD</i> ; <i>Mattia Arturi, MS</i> ; <i>Luca Tajana, MD</i> ; <i>Matteo Moretti, MD</i> ; <i>Gulnaz T. Javan, PhD</i> ; <i>Silvia D. Visonà, MD, PhD</i> ; <i>Luca Morini, PhD</i>                                                                                                                 |
| 11:30 AM – 1:00 PM | I33 | <b>Black Esophagus and Diabetic Ketoacidosis: A Report of an Autopsy Case</b><br><i>Nicolo' Vernazza, MD*</i> ; <i>Cristiano Micera, MD</i> ; <i>Francesca Buffelli, MD</i> ; <i>Francesco Ventura, MD, PhD</i> ; <i>Camilla Tettamanti, MD, PhD</i>                                                                                                                                                                                        |
| 11:30 AM – 1:00 PM | I34 | <b>A Blunt Force Injury to the Chest Caused by Firework Misuse: A Case Report</b><br><i>Roa Alqabbani*</i> ; <i>Melissa A. Brassell, MD</i>                                                                                                                                                                                                                                                                                                 |
| 11:30 AM – 1:00 PM | I35 | <b>Frail Elder Abuse in Long-Term Care Facilities: A Suspected Case of Atypical Asphyxia</b><br><i>Roberta Mercuri, MD*</i> ; <i>Filippo Spigno, MD</i> ; <i>Sara Lo Pinto, MD</i> ; <i>Francesco Ventura, MD, PhD</i> (FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                                          |
| 11:30 AM – 1:00 PM | I36 | <b>Sudden Death Secondary to Colloid Cyst of the Third Ventricle: A Case Review</b><br><i>Erin Flaherty*</i> ; <i>Christine James, DO</i> ; <i>Amanda O. Fisher-Hubbard, MD</i> ; <i>Allison L. Deemter, MA</i>                                                                                                                                                                                                                             |

# PATHOLOGY/BIOLOGY

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|--------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>I37</b> | <b>Marjolin's Ulcers in the Forensic Setting: When Cancer Becomes a Homicide</b><br><i>Kamilah Fernandez, MD*</i> ; <i>Stephanie A. Dean, MD</i>                                                                                                                                                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>I38</b> | <b>Oxidative Stress in Sepsis: A Focus on Cardiac Pathology</b><br><i>Giuseppe Bertozzi, MD*</i> ; <i>Raffaele La Russa, MD, PhD*</i> ; <i>Domenico Martinelli, MD, PhD</i> ; <i>Santina Cantatore, MLT</i> ; <i>Luigi Cipolloni, MD*</i>                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>I39</b> | <b>Blunt Force Trauma and Aspiration of Gastric Contents: What Is the Cause of Death? An Unusual Case</b><br><i>Luca Tomassini*</i> ; <i>Anna Maria Manta, MD*</i> ; <i>Piergiorgio Fedeli</i> ; <i>Cristiana Gambelunghe, PhD</i> ; <i>Massimo Lancia, MD</i>                                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>I40</b> | <b>Dealing With a Massive Number of Victims Due to an Accidental Fire</b><br><i>Amir Hamuod*</i>                                                                                                                                                                                                                                                                                                              |
| 11:30 AM – 1:00 PM | <b>I41</b> | <b>Bee-Ware of MDPHP: A Case of Intoxication by Synthetic Cathinones Resulting in Hundreds of Bee Stings</b><br><i>Jacopo Chirillo, DM</i> ; <i>Pietro Clemente C. Salmoirago, MD*</i> ; <i>Claudia Carelli</i> ; <i>Mirella Sabatino, MD</i> ; <i>Valeria Prandini, MD</i> ; <i>Greta Seveso, DM</i> ; <i>Simone Turpini, MD</i> ; <i>Carlo Previderè</i> ; <i>Luca Tajana, MD</i> ; <i>Luca Morini, PhD</i> |
| 11:30 AM – 1:00 PM | <b>I42</b> | <b>When a Nursing Home Turns Into a Killing Home—Forensic Aspects of Serial Murder in Health Care: A Case of a Serial Killer Nurse</b><br><i>Federica Spina, MD*</i> ; <i>Giacomo Visi, MD*</i> ; <i>Eleonora Mezzetti, MD</i> ; <i>Andrea Costantino, MD</i> ; <i>Antonello Di Paolo, MD</i> ; <i>Silvio Chericoni, PhD</i> ; <i>Fabio Stefanelli, PhD</i>                                                   |
| 11:30 AM – 1:00 PM | <b>I43</b> | <b>Respiratory Illness Surveillance in Suspected Drug-Related Deaths</b><br><i>Abigail J. Grande, BS, MPH*</i> ; <i>Asmaa Obead, MBChB, MPH</i> ; <i>Gemma Harkin, BS, MPH</i> ; <i>Joyce L. deJong, DO</i> ; <i>Amanda O. Fisher-Hubbard, MD</i> ; <i>Christine M. Pink, PhD</i>                                                                                                                             |
| 11:30 AM – 1:00 PM | <b>I44</b> | <b>Comparing Manner of Death in Georgia Prison and Jail Populations</b><br><i>Alexander Yue, BS, BA*</i> ; <i>Rachel Geller, MD</i> ; <i>Sandra P. Reynolds, MD</i> ; <i>Ashley Garrish</i>                                                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>I45</b> | <b>The Effect of Preservation, Time, and Temperature on DNA Recovery of Blow Fly Specimens (Diptera: Calliphoridae)</b><br><i>Kathryn Melancon*</i> ; <i>Sydnee N. Wedel, BSc</i> ; <i>Jonathan J. Parrott, PhD</i>                                                                                                                                                                                           |
| 11:30 AM – 1:00 PM | <b>I46</b> | <b>The Succession of Invertebrate Communities Involved in Swine Decomposition in Freshwater Environments in Italy</b><br><i>Andrea Benassi, PhD, MS*</i> ; <i>Gloria Raise</i> ; <i>Nicholas Lorusso</i> ; <i>Denise Gemmellaro, PhD*</i>                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>I47</b> | <b>The Persistence of DNA in Water From an Actively Decomposing Cadaver for Human Identification</b><br><i>Anna Mae Adkins, BS*</i> ; <i>Rachel Houston, PhD</i> ; <i>Sheree R. Hughes, BSc, PhD</i> ; <i>Haeli Kennedy, BS</i> ; <i>Hannah K. Cervenka, BS</i>                                                                                                                                               |

# PATHOLOGY/BIOLOGY

## Thursday—Session I

### 2024 Jay Dix Lecture Series

Moderator: Michael Graham, MD

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|---------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:10 AM   | I107 | <b>2024 Jay Dix Day Memorial Lecture Series</b><br><i>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*</i> |
| 9:10 AM – 9:50 AM   | I107 | <b>Postmortem Changes</b><br><i>Joseph A. Prahlow, MD*</i>                                                                                                                                                       |
| 9:50 AM – 10:15 AM  |      | <b>BREAK</b>                                                                                                                                                                                                     |
| 10:15 AM – 11:05 AM | I107 | <b>Firearm Injuries</b><br><i>Andrew Baker, MD*</i>                                                                                                                                                              |
| 11:05 AM – 12:00 PM | I107 | <b>Deaths Involving Watery Environments</b><br><i>James L. Caruso, MD*</i>                                                                                                                                       |
| 12:00 PM – 2:00 PM  |      | <b>BREAK</b>                                                                                                                                                                                                     |
| 2:00 PM – 2:50 PM   | I107 | <b>Asphyxia</b><br><i>Susan F. Ely, MD*</i>                                                                                                                                                                      |
| 2:50 PM – 3:05 PM   |      | <b>BREAK</b>                                                                                                                                                                                                     |
| 3:05 PM – 3:55 PM   | I107 | <b>Not Just Small Adults: Essentials of Pediatric Pathology</b><br><i>Katherine Maloney, MD*</i>                                                                                                                 |
| 3:55 PM – 5:00 PM   | I107 | <b>Sharp Force Injuries</b><br><i>James R. Gill, MD*</i>                                                                                                                                                         |

## Thursday—Session II

### COVID-19 and Other Causes of Death

Moderator: Gregory Schmunk, MD

Co-Moderator: Amir Hamoud, MD

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|-------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM | I48 | <b>Death From Angioedema With Anaphylaxis and COVID-19</b><br><i>Lakshmanan Sathyavagiswaran, MD*; Richard Ou, MD; J Daniel Augustine, MD</i>                                                                                                                        |
| 8:45 AM – 9:00 AM | I49 | <b>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</b><br><i>Jennifer L. Ross, MD*</i>                                                                                 |
| 9:00 AM – 9:15 AM | I50 | <b>Drowning Associated With Carbon Monoxide Toxicity in the Setting of Recreational Boating</b><br><i>Reba Sue Cherian, DO*; Leticia Schuman, MD; Brad Hall, PhD; J. Keith Pinckard, MD, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i> |

# PATHOLOGY/BIOLOGY

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| 9:15 AM – 9:30 AM   | I51 | <b>A Cornucopia of Death by Gas: Fatalities Involving Organic and Inorganic Gases</b><br><i>Hannah C. Jarvis, MBBS, MRCS*; Gregory Dickinson, MD, MS</i>                                                                                                                                           |
| 9:30 AM – 9:45 AM   | I52 | <b>The Postmortem Utility of Neuron-Specific Enolase and S100B for Differentiating Traumatic Brain Injury From Other Causes of Death</b><br><i>Siddhartha Das, MD*; Ramaswamy N, MD; Vinod Ashok Chaudhari, MD; Prashant Shankarrao Adole, MBBS, MD; Sreerexha J, MD; Harichandrakumar, KT, MD</i> |
| 9:45 AM – 10:00 AM  | I53 | <b>The Clarksburg Insulin Murders</b><br><i>Paul S. Uribe, MD*; Katherine A. Grosso, MA, BS*; Colin F. Davis*; Keith G. Vereb*; Jarod Douglas*</i>                                                                                                                                                 |
| 10:00 AM – 10:15 AM | I54 | <b>A Complex Suicide With Over 250 Sharp Force Injuries and Falling From Height</b><br><i>Maya Neumann*; Wolfgang Grellner, MD</i>                                                                                                                                                                 |
| 10:15 AM – 10:30 AM |     | <b>BREAK</b>                                                                                                                                                                                                                                                                                       |

## Pediatric Deaths

Moderator: Jolee Suddock, DO

Co-Moderator: Michael Harrell, MD

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| 10:30 AM – 10:45 AM | I55 | <b>Medicolegal Pediatric Natural Deaths: Causes of Death and Demographics</b><br><i>John W. Powell, MD*; Hannah C. Jarvis, MBBS, MRCS; Melissa M. Blessing, DO</i>                                                                                                                                            |
| 10:45 AM – 11:00 AM | I56 | <b>An Unusual Form of Sudden Infant Death in the Arctic</b><br><i>Cristin Marie Rolf, MD*</i>                                                                                                                                                                                                                 |
| 11:00 AM – 11:15 AM | I57 | <b>Child Abuse Diagnostic Work-Up: Let's Put on Our Thinking Caps</b><br><i>Anita Sammarco, MD*; Pierpaolo Di Lorenzo, MD; Maria Pieri; Mariagrazia Marisei, MD; Gaetano Di Donna, MD; Fabio Policino; Emanuele Capasso, MD; Massimo Niola, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 11:15 AM – 11:30 AM | I58 | <b>Suicides in Childhood and Adolescence: A Ten-Year Study From Jefferson County, Alabama</b><br><i>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</i>                        |
| 11:30 AM – 11:45 AM | I59 | <b>Changes to the Certification of Sudden Unexplained Deaths in Infants From 2012 to 2023</b><br><i>Amanda Lynne Marinello, BS*; Brandi C. McCleskey, MD</i>                                                                                                                                                  |
| 11:45 AM – 12:00 PM | I60 | <b>A Histological Examination of the Uterus to Confirm Early Pregnancy in Female Homicide Victims</b><br><i>Marianne Hamel, MD, PhD*; Andrew F. Falzon, MD, MCS</i>                                                                                                                                           |
| 12:00 PM – 1:00 PM  |     | <b>BREAK</b>                                                                                                                                                                                                                                                                                                  |

## Case Reports

Moderator: Owen Middleton, MD

Co-Moderator: Quinn Demik, MD

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|-------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | I61 | <b>Multiple Shots of Different Firearms in a Charred Corpse: A Case Report</b><br><i>Mattia Arturi, MS*; Martina Demasi, MD; Nicolas Martinelli; Pierangela Grignani; Francesca Freni, MS; Yao Chen, MD</i> |
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# PATHOLOGY/BIOLOGY

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| 1:15 PM – 1:30 PM | <b>I62</b> | <b>A Macro and Micro Time-Dependent Washer Woman Wrinkling and Reversibility Trivialized in a Bathtub Drowning: A Case Presentation</b><br><i>Pete Speth, MD*</i>                                                            |
| 1:30 PM – 1:45 PM | <b>I63</b> | <b>Complete Laryngotracheal Separation Without Decapitation in a Case of Hanging: An Uncommon Phenomenon</b><br><i>Nilesh Keshav Tumram, MBBS, MD*</i>                                                                       |
| 1:45 PM – 2:00 PM | <b>I64</b> | <b>One House, Two Bodies: A Case Series and Considerations for Investigating Companion “Double Deaths,” Including Challenges in the “Philemon and Baucis” Syndrome</b><br><i>Deland Weyrauch, MD*; Christopher Borck, MD</i> |
| 2:00 PM – 2:15 PM | <b>I65</b> | <b>A Diamond in the Rough—Myocardial Infarction as a Complication of “Near Hanging” in an Adolescent: An Exceptionally Rare-Find Case Report</b><br><i>Barbara Iga Smyk, DM*; José Jerónimo Fonte-Santa da Silva</i>         |
| 2:15 PM – 2:30 PM | <b>I66</b> | <b>A Macro and Micro Time-Dependent Washer Woman Wrinkling and Reversibility in a Bathtub Drowning Case: 20th-Century German Research Proves Innocence</b><br><i>Pete Speth, MD*</i>                                         |
| 2:30 PM – 2:45 PM | <b>I67</b> | <b>Deaths Involving Forklifts in Cook County, Illinois: A Retrospective Review</b><br><i>Megan Kinn, DO, MS*; Lorenzo Gitto, MD; David M. Waters, MD</i>                                                                     |
| 2:45 PM – 3:00 PM | <b>I68</b> | <b>Myocardial Scarring and Interstitial Fibrosis: An Unknowable, Unpredictable, and Unavoidable Tragedy</b><br><i>Gerald Feigin, MD*; Priya Banerjee, MD; Gil Sapir, JD, MSc</i>                                             |
| 3:00 PM – 3:15 PM | <b>I69</b> | <b>Death by Lung Hypoplasia as a Result of a Bilateral Congenital Diaphragmatic Hernia</b><br><i>Maya Neumann*; Wolfgang Grellner, MD</i>                                                                                    |
| 3:15 PM – 3:30 PM |            | <b>BREAK</b>                                                                                                                                                                                                                 |

## Interdisciplinary Approach

Moderator: Gregory Schmunk, MD

Co-Moderator: Lorenzo Gitto, MD

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| 3:30 PM – 3:45 PM | <b>I70</b> | <b>Utilizing an In-House Forensic Epidemiologist in the Denver Office of the Medical Examiner</b><br><i>Ami L. Jackson, DO*; Meredith A. Frank, MD; Ethan Jamison, MPH; James L. Caruso, MD; Ian J. Puffenberger, MD; Sterling J. McLaren, MD</i>                                                                                                                          |
| 3:45 PM – 4:00 PM | <b>I71</b> | <b>A Multidisciplinary Approach to the Canonical Recognition Activities Conducted on the Bone Remains Attributed to St. Hippolytus and the Martyrs Crescentius and Irenaeus (4th Century AD)</b><br><i>Francesca Consalvo, MD*; Alessandro Santurro, MD, PhD*; Carmen Sementa, MD; Chantal Milani, DMD, PhD; Francesca Motta; Francesco La Sala, MD; Sergio Brogna, MD</i> |
| 4:00 PM – 4:15 PM | <b>I72</b> | <b>A Death in the Setting of Diabetic Ketoacidosis and Concurrent SGLT2 Inhibitor Use</b><br><i>Christopher Sullivan*; Angelina Phillips, MD</i>                                                                                                                                                                                                                           |
| 4:15 PM – 4:30 PM | <b>I73</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                           |

# PATHOLOGY/BIOLOGY

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| 4:30 PM – 4:45 PM | <b>I74</b> | <b>Investigating Equine-Related and Bovine-Related Human Fatalities in Oklahoma</b><br><i>Kaylan Peterson, MS*</i> ; Wayne D. Lord, PhD; Ross J. Miller, BA, MD; Mark R. McCoy, EdD; Timothy Dwyer, MSFS; Amber L. Fortney, MS; Sean Laverty<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                            |
| 4:45 PM – 5:00 PM | <b>I75</b> | <b>The Perils of Body Size Assumption in Subadult Sibling Death Identifications</b><br><i>John B. Nase, DDS*</i>                                                                                                                                                                                                                     |
| 5:00 PM – 5:15 PM | <b>I76</b> | <b>The Prevalence of Ethanol and Drugs Detected in Road Traffic Deaths: A Ten-Year Survey From Jefferson County, Alabama</b><br><i>Nicola Pigaiani, MD*</i> ; Brandi C. McCleskey, MD; Daniel S. Atherton, MD; Daniel W. Dye, MD; Giacomo Musile, PhD; Federica Bortolotti, MD, PhD; Gregory G. Davis, MD, MSPH; Karen S. Scott, PhD |
| 5:15 PM – 5:30 PM | <b>I77</b> | <b>The Graveyard Spiral and the Day the Music Died</b><br><i>Edmund R. Donoghue, MD*</i>                                                                                                                                                                                                                                             |

## Thursday—Session III

### Multidisciplinary Session: Pathology/Biology and Toxicology

Moderator: Robert Johnson, PhD

Co-Moderator: Rhonda Mittenzwei, MD

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| 1:00 PM – 1:15 PM | <b>L52</b> | <b>2C or Not Tusi? The Emergence of a New Drug Combination in Miami</b><br><i>Rocio Potoukian, BS*</i> ; Diane Moore, PhD; Kenneth Hutchins, DM                                                                                                                                                                                |
| 1:15 PM – 1:30 PM | <b>L53</b> | <b>The Frequency and Analysis of Kratom in Postmortem Cases</b><br><i>William M. Schroeder, II, MS*</i> ; Donna M. Papsun, MS; Justin Brower                                                                                                                                                                                   |
| 1:30 PM – 1:45 PM | <b>L54</b> | <b>Postmortem Diagnosis of Ketoacidosis: The Importance of Beta-Hydroxybutyrate Quantification as Part of Routine Toxicological Screening at Autopsy</b><br><i>Jeroen Roosendaal, MSFS*</i> ; Astrid Christiaens, MD; Kiki Van Langen, MD; Ingrid Bosman, PhD, MSFS                                                            |
| 1:45 PM – 2:00 PM | <b>L55</b> | <b>A Case Series of Suicides by Sodium Azide Ingestion: An Update</b><br><i>Ingrid Bosman, PhD, MSFS*</i> ; Roelof Oosting, MD; Dick-Paul Kloos, MD; Bart Ruiter; Jeroen Roosendaal, MSFS; Kristof Maudens, MHA, BS                                                                                                            |
| 2:00 PM – 2:15 PM | <b>I78</b> | <b>I Didn't Want to Kill Him! The Role of Cocaine in Pseudoasphyxia by Compression of the Carotid Sinus</b><br><i>Eleonora Mezzetti, MD*</i> ; Matteo Leoni, MD; Andrea Costantino, MD; Carla Occhipinti, MD; Rebecca Pieretti, MD; Aniello Maiese, PhD                                                                        |
| 2:15 PM – 2:30 PM | <b>I79</b> | <b>Not So Much the "Spice" of Life: Identifying a Source for a Series of MDMB-4en-PINACA Deaths</b><br><i>Michael Chaump, MD*</i> ; Robert Johnson, PhD; Aria McCall, BS; Kei Osawa, MFS; Steven J. Hemberger, DO; Mark E. Shelly; Richard Fries; Dana Hopson, MD<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 2:30 PM – 2:45 PM | <b>I80</b> | <b>Elevated Beta-Hydroxybutyrate Within a Pediatric Population and Its Associated Pathology: A Retrospective Case Series</b><br><i>Nasim Haghandish, MDCM, PhD*</i> ; Chris Milroy, MD, LLB; Jacqueline Parai, MD; Anthea Lafreniere, MD                                                                                       |

# PATHOLOGY/BIOLOGY

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*

## Friday

### Poster Session

- 11:30 AM – 1:00 PM **I82 Postmortem Interval Estimation Using MiRNAs: A Forensic Application**  
*Paurabhi Singh, MSc\**; *Uma Shankar Singh, MD*; *Sangeeta Kumari, MD*
- 11:30 AM – 1:00 PM **I83 Recombinase Polymerase Amplification (RPA) for the Identification of Canine and Chicken Blood Samples**  
*Julian L. Mendel\**; *Hanna Mellul*; *DeEtta Mills, PhD*
- 11:30 AM – 1:00 PM **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*
- 11:30 AM – 1:00 PM **I85 A Retrospective Review of Genetic Testing and Its Impact on Cause of Death**  
*Larissa Ybanez, BS, BA\**; *Stacey Murthy, MD*
- 11:30 AM – 1:00 PM **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*
- 11:30 AM – 1:00 PM **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*; *Frati Paola, MD\**
- 11:30 AM – 1:00 PM **I88 A Metagenomic Approach in Forensic Science for Human Identification Among a North Indian Population**  
*Sangram Sandhu, MSc\**; *Niraj Rai, PhD*; *Pooran Chand, MDS*
- 11:30 AM – 1:00 PM **I89 An Extracorporeal Tissue Degradation Model to Investigate PMI Markers**  
*Stefan Pittner, PhD*; *Eileen Holzer, BS\**; *Fabio Monticelli, PhD*; *Peter Steinbacher*; *Jane Harris, PhD*
- 11:30 AM – 1:00 PM **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\**
- 11:30 AM – 1:00 PM **I91 The Value and Versatility of Histology in the Forensic Autopsy: Changing Cases From Suspicious to Natural Causes**  
*Joanne Hanna, BAS\**; *Yeliena Baber, FRCPath, FRCPA*
- 11:30 AM – 1:00 PM **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*

# PATHOLOGY/BIOLOGY

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| 11:30 AM – 1:00 PM | <b>I93</b>  | <b>The Role of Thiols in Putrefaction: An Analysis of Biochemical Interactions in Forensic Cases</b><br><i>Isabella Aquila, PhD, MD*</i> ; <i>Claudia Catia De Pasquale</i> ; <i>Matteo Antonio Sacco, MD*</i> ; <i>Maria Manno, MD</i> ; <i>Saverio Gualtieri, MD</i> ; <i>Lucia Tarda, MD</i> ; <i>Luca Calanna, MD*</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Wandamaria Mazzuca</i> ; <i>Pietrantonio Ricci, PhD, MD</i>                                              |
| 11:30 AM – 1:00 PM | <b>I94</b>  | <b>Iatrogenic Injuries Due to Endoscopic Techniques: The Role of Medicolegal Analysis for Forensic Purposes</b><br><i>Matteo Antonio Sacco, MD*</i> ; <i>Maria Manno, MD</i> ; <i>Angelica Zibetti, MD</i> ; <i>Umberto Rosini, MD</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Lucia Tarda, MD</i> ; <i>Antonio Pallante, MD</i> ; <i>Luca Calanna, MD</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i>                                          |
| 11:30 AM – 1:00 PM | <b>I95</b>  | <b>Neonatal Traumatic Deaths: Differentiating Homicidal and Accidental Cases by a Multidisciplinary Approach</b><br><i>Aromatario Mariarosaria, MD PhD*</i> ; <i>Benedetta Baldari, MD</i> ; <i>Francesco Carpano, MD*</i> ; <i>Moro Diego, MD*</i> ; <i>Luigi Cipolloni, MD*</i> ; <i>Fineschi Vittorio, MD, PhD*</i> ; <i>Tartaglione Tommaso, MD*</i>                                                                                                                      |
| 11:30 AM – 1:00 PM | <b>I96</b>  | <b>Post-Traumatic Intracranial Aneurysms of Anterior Circulation: Always a Challenge in the Forensic Field</b><br><i>Gabriele Napoletano, MD*</i> ; <i>Fabio Del Duca, MD</i> ; <i>Giacomo Visi, MD</i> ; <i>Federica Spina, MD</i> ; <i>Eleonora Mezzetti, MD</i> ; <i>Alessandra De Matteis</i> ; <i>Aniello Maiese, PhD*</i>                                                                                                                                               |
| 11:30 AM – 1:00 PM | <b>I97</b>  | <b>Analyzing the Past to Help Shape Our Children's Futures: A Ten-Year Review of Pediatric Deaths in Arapahoe County, Colorado</b><br><i>Emma Selner, DO*</i> ; <i>Casey Bitting, DO*</i>                                                                                                                                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>I98</b>  | <b>Scuba Diving, Extreme Sports, and Undetected Cardiac Pathologies. Is There a Need for Further Clinical Examinations to Make These Activities Safer for Health?</b><br><i>Eleonora Mezzetti, MD*</i> ; <i>Federica Spina, MD*</i> ; <i>Ilaria Marcacci, MD</i> ; <i>Rebecca Pieretti, MD</i> ; <i>Matteo Leoni, MD</i> ; <i>Marco Di Paolo, MD</i>                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>I99</b>  | <b>Death by Frostbite: From Theory to Reality</b><br><i>Stefano Duma, MD*</i> ; <i>Federica Mele, MD</i> ; <i>Mariagrazia Calvano, MD</i> ; <i>Mirko leonardelli, MD</i> ; <i>Enrica Macorano, MD</i> ; <i>Giovanni De Gabriele, MD</i> ; <i>Alessandro Cristalli, MD</i> ; <i>Francesco Introna</i>                                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>I100</b> | <b>Too Hot to Handle: A Review of Carbon Monoxide Levels in Fire Fatalities</b><br><i>Olivia Ostermann, BS*</i> ; <i>Stacey Murthy, MD</i>                                                                                                                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>I101</b> | <b>Smoke and Mirrors: A Bullet-less Intraoral Gunshot Wound</b><br><i>Nicole Burgin, BS*</i> ; <i>Natasha Grandhi, MD</i> ; <i>Sandra P. Reynolds, MD</i>                                                                                                                                                                                                                                                                                                                     |
| 11:30 AM – 1:00 PM | <b>I102</b> | <b>The Management of Deaths in Railway Stations: Investigation Methodologies and Safety Prospects for Public Health</b><br><i>Matteo Antonio Sacco, MD*</i> ; <i>Vincenzo Maria Ritorto, MD</i> ; <i>Fabrizio Cordasco, MD</i> ; <i>Carmen Scalise, PhD, MD</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Roberto Raffaele*</i> ; <i>Luca Calanna, MD*</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i>                                            |
| 11:30 AM – 1:00 PM | <b>I103</b> | <b>The Analysis of Gunshot Wounds in Gun Tests on Biological Matrices: An Experimental Study on Pig Heads</b><br><i>Isabella Aquila, PhD, MD*</i> ; <i>Massimo Musardo</i> ; <i>Massimo Lupo</i> ; <i>Roberto Raffaele*</i> ; <i>Matteo Antonio Sacco, MD*</i> ; <i>Luca Calanna, MD*</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Saverio Gualtieri, MD</i> ; <i>Lucia Tarda, MD</i> ; <i>Antonio Pallante, MD</i> ; <i>Wandamaria Mazzuca*</i> ; <i>Mariachiara Militi</i> |
| 11:30 AM – 1:00 PM | <b>I104</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

# PATHOLOGY/BIOLOGY

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|--------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>I105</b> | <b>Penile Torsion as a Method of Identification</b><br><i>Fernanda Da Silva Iameira, MD*; Nicole M. Masian, MD; Wendy M. Gunther, MD</i>                                                                                                                                                                                                                                                                                                   |
| 11:30 AM – 1:00 PM | <b>I106</b> | <b>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</b><br><i>Matteo Antonio 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 Gratterer, PhD, MD; Isabella Aquila, PhD, MD*</i> |

## Forensic Entomology

Moderator: Lavinia Iancu, PhD

Co-Moderator: Nicolette Ras, BS

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|---------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:45 AM   | <b>I108</b> | <b>Necrophagous Insect Species Succession on Decomposed Pig Carcasses During North Dakota's Summer Months</b><br><i>Lavinia Iancu, PhD*; Rebecca Simmons, PhD; Tiberiu Sahlean, PhD; Malia R. Wellens, BS; Ranjana Mosby, BS</i>              |
| 8:45 AM – 9:00 AM   | <b>I109</b> | <b>The Effects of Common Insecticides on Blow Fly (Diptera: Calliphoridae) Oviposition in the Field</b><br><i>Teomie S. Rivera-Miranda, BSc, MSc*; Krystal R. Hans, PhD</i>                                                                   |
| 9:00 AM – 9:15 AM   | <b>I110</b> | <b>It Boils Down to This: An Initial Evaluation, Using the Forensically Important Blow Fly <i>Cochliomyia Macellaria</i>, on the Usefulness of Gene Expression Following the Common Method of Boiling Larvae</b><br><i>Joshua Smith, PhD*</i> |
| 9:15 AM – 9:30 AM   | <b>I111</b> | <b>Baits, Bodies, and Bugs: An Analysis of Forensic Entomology in Arizona</b><br><i>Lauren Weidner, PhD*; Andrew Meeds</i>                                                                                                                    |
| 9:30 AM – 9:45 AM   | <b>I112</b> | <b>Feline Forensics: Revealing the Unique Decomposition and Forensically Relevant Blow Flies (Diptera: Calliphoridae) Associated With Cats</b><br><i>Kelly Bagsby, MS, BS*; Krystal R. Hans, PhD</i>                                          |
| 9:45 AM – 10:00 AM  | <b>I113</b> | <b>How Can Forensic Entomology Contribute to Solving Rhinoceros Poaching in South Africa?</b><br><i>Ian R. Dadour, MSc, PhD*; Melanie Pienaar, BSc; Christopher W. Weldon, PhD</i>                                                            |
| 10:00 AM – 10:15 AM | <b>I114</b> | <b>Winter Decomposition in North Dakota and Vertebrate Scavengers</b><br><i>Lavinia Iancu, PhD*; Nicolette Ras, BS</i>                                                                                                                        |
| 10:15 AM – 10:30 AM |             | <b>BREAK</b>                                                                                                                                                                                                                                  |

## Forensic Entomology and Omics

Moderator: Ian Dadour, PhD

Co-Moderator: Kristi Bugajski, PhD

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|---------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:30 AM – 10:45 AM | <b>I115</b> | <b>Assessing the Impacts of Prescription Medications and Metabolites on Larval Blow Fly Development</b><br><i>Hayden S. McKee-Zech, MSc*; Charity G. Owings, PhD; Dawnie W. Steadman, PhD</i>                                         |
| 10:45 AM – 11:00 AM | <b>I116</b> | <b>A Decade Into Developing a Microbiome Tool for Predicting the Postmortem Interval: Where Are We Now and Where Are We Going?</b><br><i>Jessica Lynne Metcalf, PhD*; Zachary Burcham, PhD; Rob Knight, PhD; David O. Carter, PhD</i> |

# PATHOLOGY/BIOLOGY

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|---------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:00 AM – 11:15 AM | <b>I117</b> | <b>Understanding Seasonal Differences in Postmortem Microbiome Development for Forensic Practice</b><br><i>Anthony Grigsby*</i> ; Kelly Waters; M. Eric Benbow, BS, PhD; Jennifer L. Pechal, PhD; Bethany Mikles, BSc, MS<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 11:15 AM – 11:30 AM | <b>I118</b> | <b>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</b><br><i>Noemi Procopio, PhD, MSc*</i> ; Lavinia Iancu, PhD*; Andrea Bonicelli, PhD, MA      |
| 11:30 AM – 11:45 AM | <b>I119</b> | <b>Developing a Multi-Omics Bone Biomolecular Signature by Integrating Metabolomics, Lipidomics, and Proteomics to Estimate Postmortem Interval</b><br><i>Andrea Bonicelli, PhD, MA*</i> ; Noemi Procopio, PhD, MSc                                                                    |
| 11:45 AM – 12:00 PM | <b>I120</b> | <b>A Metabolomics Investigation of Postmortem Human Pericardial Fluid</b><br><i>Alberto Chighine, MD*</i> ; 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  |             | <b>BREAK</b>                                                                                                                                                                                                                                                                           |

## Forensic Omics and Pathology/Biology Standards

Moderator: Noemi Procopio, PhD

Co-Moderator: Krystal Hans, PhD

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|-------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 1:15 PM | <b>I121</b> | <b>Infant Postmortem Microbiome Biomarkers: An Initial Survey</b><br><i>Jennifer L. Pechal, PhD*</i> ; Bethany Mikles, BSc, MS; Heather Jordan, PhD; M. Eric Benbow, BS, PhD; Carl Schmidt, MD, MPH                                                                                                                        |
| 1:15 PM – 1:30 PM | <b>I122</b> | <b>A Longitudinal Study for PMI Estimation Via GC/MS Metabolomics Applied to Porcine Muscle Tissue</b><br><i>Andrea Bonicelli, PhD, MA*</i> ; 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 | <b>I123</b> | <b>The Mass Grave Project: The Impact of Freezing and Burial on Personal Identification Through Human DNA Analysis</b><br><i>Sarah Gino, MD*</i> ; Giulia Sguazzi, 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 | <b>I124</b> | <b>The Recovery of Corpses From Aquatic Environments: Procedural Standards to Maximize Evidence Recovery</b><br><i>Denise Gemmellaro, PhD*</i> ; Andrea Zaferes, BA*; Gloria Raise                                                                                                                                         |
| 2:00 PM – 2:15 PM | <b>I125</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                           |
| 2:15 PM – 2:30 PM | <b>I126</b> | <b>Standards Development Activities in Medicolegal Death Investigation and Forensic Pathology</b><br><i>J. Keith Pinckard, MD, PhD*</i>                                                                                                                                                                                    |
| 2:30 PM – 2:45 PM | <b>I127</b> | <b>Systematized International Capacity Development for Forensic Pathology in Low-Resource Jurisdictions: A Proposed Model</b><br><i>Alfredo Eugene Walker, MBBS*</i>                                                                                                                                                       |

# PATHOLOGY/BIOLOGY

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|-------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2:45 PM – 3:00 PM | <b>I128</b> | <b>2023 State Legislative Encroachments Against Forensic Pathology Professionalism and Independence: Harbingers of Future Threats and Opportunity for Strategic Planning and Action</b><br><i>M.J. Menendez, JD*; Joyce L. deJong, DO</i>            |
| 3:00 PM – 3:15 PM | <b>I129</b> | <b>The 2022 NFLIS Medical Examiner and Coroner (MEC) Survey Findings</b><br><i>Bryan A. Ruggery, MFS*; DeMia P. Pressley, MS; Kelly Keyes, BS; Katherine Bollinger, MS; Hope M. Smiley-McDonald, PhD; Megan R. Waggy, MA, BA; Devon S. Cribb, MS</i> |
| 3:15 PM – 3:30 PM |             | <b>BREAK</b>                                                                                                                                                                                                                                         |

## Pathology/Biology Standards and Imaging

Moderator: Caroline Rowe, PhD

Co-Moderator: Tuyet Tran, DO

|                   |             |                                                                                                                                                                                                                                                                         |
|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:30 PM – 3:45 PM | <b>I130</b> | <b>Preserving the Silent Witnesses: Ensuring Long-Term Maintenance of Insect Evidence in Forensic Investigations</b><br><i>Ian R. Dadour, MSc, PhD*; Paola A. Magni, PhD; Martin J.R. Hall, PhD</i>                                                                     |
| 3:45 PM – 4:00 PM | <b>I131</b> | <b>The Toxic Workplace in Forensics</b><br><i>Paul S. Uribe, MD*</i>                                                                                                                                                                                                    |
| 4:00 PM – 4:15 PM | <b>I132</b> | <b>But What Does It Mean? A Rationale for a Standardized Means of Death Classification System</b><br><i>Sarah Anderson, DO*; Katarina M. Volkoff; Brandi C. McCleskey, MD</i>                                                                                           |
| 4:15 PM – 4:30 PM | <b>I133</b> | <b>Plastic Bag Suffocation: A Case Series and an Effective Protocol Proposal</b><br><i>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</i>    |
| 4:30 PM – 4:45 PM | <b>I134</b> | <b>A Case of Ductus Venosus Agenesis (DVA) in a Stillborn Baby: The Postmortem Computed Tomography (CT) Scan and Autopsy Findings</b><br><i>Martina Demasi, MD*; Chiara Franzetti, MD; Luisa Andrello, MD, PhD; Matteo Moretti, MD; Rosa Maria Martinez</i>             |
| 4:45 PM – 5:00 PM | <b>I135</b> | <b>Minimally Invasive Postmortem Autopsies Using CT-Guided Biopsies in Suspected Cases of Pneumonia: A Feasibility Study</b><br><i>Yonatan Carl, MD*; Jamie Elifritz, MD; Micheal Harrell, MD; Kethery Haber, MHA, BS; Sarah Lathrop, DVM, PhD; Lauren Dvorscak, MD</i> |
| 5:00 PM – 5:15 PM | <b>I136</b> | <b>An Analysis of Autopsy-Radiology Discordance in Cases of Fatal Blunt Force Injury</b><br><i>Natalie L. Adolphi, PhD*; Yi-Li Grace Wong, MD; Jamie Elifritz, MD</i>                                                                                                   |

# PSYCHIATRY & BEHAVIORAL SCIENCE

## Thursday

### Poster Session

|                    |     |                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | J1  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | J2  | <b>A Polygraph Examination of a Rape and Murder Suspect: A Case Study</b><br><i>Aabad Ayoub, MPhil*</i>                                                                                                                                                                                                                                                                                           |
| 11:30 AM – 1:00 PM | J3  | <b>Internet Gaming Disorder: An Invisible Addiction With Real Damage</b><br><i>Adriana Scuotto*; Pascale Basilicata; Valentina Battimiello*; Dario Bruzzese, PhD; Anita Sammarco, MD; Gaetano Di Donna, MD; Massimo Niola, PhD; Maria Pieri</i>                                                                                                                                                   |
| 11:30 AM – 1:00 PM | J4  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | J5  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | J6  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | J7  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| 11:30 AM – 1:00 PM | J8  | <b>The Treatment Decision-Making Capacity (TDMC) in Children and Adolescents Undergoing Orthopedic Surgery: A Comparison With Their Parents</b><br><i>Gabriele Mandarelli*; Cristina Caterino, DM; Daniela Dibello; Michele Pellegrini; Marcello Benevento, MD; Davide Ferorelli; Giulia Petroni; Angelo Di Giovanni, MD; Felice Francesco Carabellese, MD; Roberto Catanesi; Biagio Solarino</i> |
| 11:30 AM – 1:00 PM | J9  | <b>Adverse Childhood Experiences and Antisocial Behavior Among Incarcerated Individuals: Unveiling the Link and Implications for Mental Health Support in Correctional Facilities</b><br><i>Sanya Gaur*; Jagmahender Singh Sehrawat, PhD</i>                                                                                                                                                      |
| 11:30 AM – 1:00 PM | J10 | <b>Brainwashing in Cults: Sexual Abuse and Delayed Treatment Until It Is Too Late</b><br><i>Caterina Bosco, MD; Lucia Tattoli, MD, PhD*; Cristiano Barbieri, PhD; Ignazio Grattagliano*; Gabriele Rocca; Giancarlo Di Vella, MD, PhD*</i>                                                                                                                                                         |

### 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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|---------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:30 AM   | J11 | <b>When Forensic Patients Want to Cross the Border: The Canadian Experience</b><br><i>Sebastien S. Prat, MD*; Lauren Barney, BA, JD</i>                                                                                                                          |
| 9:30 AM – 10:00 AM  | J12 | <b>Fitness to Stand Trial Under Canadian Criminal Law: A New Leaf After Bharwani</b><br><i>Lauren Barney, BA, JD*; Sebastien S. Prat, MD*</i>                                                                                                                    |
| 10:00 AM – 10:30 AM | J13 | <b>Competence to Stand Trial Training in Forensic Psychiatry Fellowships</b><br><i>Faiz Kidwai, DO*; George D. Annas, MD, MPH</i>                                                                                                                                |
| 10:30 AM – 10:55 AM | J14 | <b>Exploring the Intersection of Mental Health and the Criminal Justice System in the United Kingdom</b><br><i>Claire Power, MSc*; Fiona Wilcox, MD, CPE; Richard Walters, LLB; Nikolas Lemos, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 10:55 AM – 11:00 AM |     | <b>BREAK</b>                                                                                                                                                                                                                                                     |
| 11:00 AM – 11:30 AM | J15 | <b>Trauma Responses and Coping Mechanisms in the Field of Forensics</b><br><i>Brianna Simental, MS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*</i>                                                                                                           |

# PSYCHIATRY & BEHAVIORAL SCIENCE

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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

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Moderator: John Chaves

Co-Moderator: Corina Freitas, MD, BSc, MBA

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

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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 Violante, LM*; *Roberta Risola, MD*; *Eleonora Murani*; *Lucia Tattoli, MD, PhD*;  
*Caterina Bosco, MD*; *Giancarlo Di Vella, MD, PhD\**

# PSYCHIATRY & BEHAVIORAL SCIENCE

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|--------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>J26</b> | <b>Self-Stigma in Alcohol Use Disorder in the Context of a Fitness-to-Drive Medical Assessment</b><br><i>Cristian Palmiere, MD, PhD*</i> ; <i>Maria Pia Scarpelli, MD</i>                                                                                                                                                                                                                                                                                                          |
| 11:30 AM – 1:00 PM | <b>J27</b> | <b>Serial Killers: Does Gender Make a Difference?</b><br><i>Trasey Roby, MS*</i> ; <i>Ismail M. Sebetan, MD, PhD*</i> ; <i>Paul Stein, PhD*</i>                                                                                                                                                                                                                                                                                                                                    |
| 11:30 AM – 1:00 PM | <b>J28</b> | <b>The Importance of Surveillance and Storage of Drugs in Prison</b><br><i>Matteo Antonio Sacco, MD*</i> ; <i>Fabrizio Cordasco, MD</i> ; <i>Valerio Riccardo Aquila</i> ; <i>Carmen Scalise, PhD, MD</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Luca Calanna, MD</i> ; <i>Alessandro Pasquale Tarallo, MD*</i> ; <i>Giulio Pulpito, MD*</i> ; <i>Marinika Salasco</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i>                                  |
| 11:30 AM – 1:00 PM | <b>J29</b> | <b>The Influence of Traumatic Life Events and Subsequent Psychopathology on Recidivism: A Critical Review</b><br><i>Sanya Gaur*</i> ; <i>Jagmahender Singh Sehrawat, PhD</i>                                                                                                                                                                                                                                                                                                       |
| 11:30 AM – 1:00 PM | <b>J30</b> | <b>The Role of Graphology in Forensic Investigations in Cases of Imputability Assessment Through the Analysis of the Writings of Prisoners</b><br><i>Palmo Tavernese</i> ; <i>Lucia Tarda, MD</i> ; <i>Matteo Antonio Sacco, MD*</i> ; <i>Valerio Riccardo Aquila</i> ; <i>Maria Cristina Verrina, MD*</i> ; <i>Luca Calanna, MD</i> ; <i>Wandamaria Mazzuca</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Felice Francesco Carabellese, MD</i> ; <i>Isabella Aquila, PhD, MD*</i> |

## Psychiatry & Behavioral Science

Moderator: Grace Cheney, MD

Co-Moderator: Michael Hernandez, BS

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|---------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:00 AM – 9:30 AM   | <b>J31</b>   | <b>Does Violent Pornography Beget Real-World Violence?</b><br><i>Jeffrey M. Sanders, MD, MHA*</i>                                                                                                                                                                                                                                                                                           |
| 9:30 AM – 10:00 AM  | <b>J32</b>   | <b>Munchausen by Proxy Syndrome: When We Dare and Why We Dare to Care</b><br><i>Mariagrazia Marisei, MD</i> ; <i>Pascale Basilicata</i> ; <i>Angela Simonelli</i> ; <i>Angela Silvestre, PhD</i> ; <i>Anita Sammarco, MD</i> ; <i>Gaetano Di Donna, MD</i> ; <i>Massimo Niola, PhD</i> ; <i>Maria Pieri*</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                   |
| 10:00 AM – 10:15 AM | <b>BREAK</b> |                                                                                                                                                                                                                                                                                                                                                                                             |
| 10:15 AM – 10:45 AM | <b>J33</b>   | <b>Suicide Notes: Postmortem Analysis and Preventive Considerations</b><br><i>Eugenio Jacopo Piero Gallotti, MD*</i> ; <i>Giacomo Belli, MD</i> ; <i>Veronica Sala, DM</i> ; <i>Mateus E. Romao, MSc</i> ; <i>Bjond Hasballa, MD</i> ; <i>Greta Seveso, DM</i> ; <i>Gianmarco Argentiero, MD</i> ; <i>Luca Morini, PhD</i> ; <i>Gulnaz T. Javan, PhD</i> ; <i>Silvia D. Visonà, MD, PhD</i> |
| 10:45 AM – 11:45 AM | <b>J34</b>   | <b>Neuroscience in the Courtroom</b><br><i>Octavio Choi, MD, PhD*</i> ; <i>Grace Cheney, MD</i> ; <i>Gayathri J. Dowling, PhD</i> ; <i>Michael Hernandez, MD</i>                                                                                                                                                                                                                            |
| 11:45 AM – 1:00 PM  | <b>BREAK</b> |                                                                                                                                                                                                                                                                                                                                                                                             |

## Multidisciplinary Forensic Psychopharmacology: Treatment Updates, Toxicology, Pathology, Legal, and Medical Ethical Considerations

Moderator: Vivian Shnaidman, MD

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|-------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 4:30 PM | <b>J35</b> | <b>Advancing Forensic Psychopharmacology: A Comprehensive Update for Forensic Scientists</b><br><i>Corina Freitas, MD, MBA*</i> ; <i>Anita Rajkumar, MD</i> ; <i>George D. Annas, MD, MPH</i> |
|-------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# QUESTIONED DOCUMENTS

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## Thursday

### Poster Session

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|--------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>K1</b> | <b>A Comparative Analysis of Wet Ink and Digitally Captured Handwriting: Real-World Applications</b><br><i>Steven N. Bunch, BS*</i> ; <i>Heidi H. Harralson, MA</i> ; <i>Larry S. Miller, PhD</i>                                |
| 11:30 AM – 1:00 PM | <b>K2</b> | <b>Estimating Sufficiency of the Pairwise Euclidean Distance on Sets of Handwritten Documents</b><br><i>Cami Fuglsby, PhD*</i> ; <i>Christopher P. Saunders, PhD</i> ; <i>Danica M. Ommen, PhD</i> ; <i>JoAnn Buscaglia, PhD</i> |
| 11:30 AM – 1:00 PM | <b>K3</b> | <b>The Mozart Scribe: Applying Forensic Handwriting Examination Methods to Identify Scribes in 18th-Century Music Calligraphy Manuscripts</b><br><i>Martin W. Jarvis, PhD</i> ; <i>Heidi H. Harralson, MA*</i>                   |
| 11:30 AM – 1:00 PM | <b>K4</b> | <b>WITHDRAWN</b>                                                                                                                                                                                                                 |

### Questioned Documents Technical Session I

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Moderator: Linda Mitchell, BS

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|---------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 AM – 8:50 AM   | <b>K5</b>  | <b>A Conservation Approach to Thermal Printer Ribbon Preservation and Imaging</b><br><i>Tobin A. Tanaka, BSc*</i> ; <i>Caroline Bernier, MSc</i> ; <i>Sincere Ip, MSc</i> ; <i>Helen Kolodziejczyk, MSc, FSc</i>                                                   |
| 8:50 AM – 9:10 AM   | <b>K6</b>  | <b>A Study of Natural Variations in Handwritten Signatures: Implications in Forensic Examinations</b><br><i>Rakesh Meena, MSc*</i> ; <i>Nandini Chitara, MSc</i> ; <i>Ankita Guleria, MSc</i> ; <i>Kewal Krishan, PhD</i> ; <i>Abhik Ghosh, PhD</i>                |
| 9:10 AM – 9:30 AM   | <b>K7</b>  | <b>Above and Beyond: Examining “Hidden” Features in Travel and Identity Documents</b><br><i>Carolyn Bayer-Broring, MFS*</i>                                                                                                                                        |
| 9:30 AM – 9:45 AM   | <b>K8</b>  | <b>A Cleaner Cascade Method for EDD: Toner Developer Guides</b><br><i>Mark Goff, BA*</i>                                                                                                                                                                           |
| 9:45 AM – 10:00 AM  | <b>K9</b>  | <b>The Characterization and Identification of Historical Inks and Their Colorants</b><br><i>Sarah Mosinski*</i> ; <i>Jordyn Guse, BS</i> ; <i>Ethan Groves, BS</i> ; <i>Katie M. White, MSc</i> ; <i>Skip Palenik, BS</i> ; <i>Christopher S. Palenik, MS, PhD</i> |
| 10:00 AM – 10:30 AM | <b>K10</b> | <b>Using Variable Light Source Technology to Support World War II Service Member Identification</b><br><i>Sarah C. Kindschuh, PhD*</i> ; <i>Larkin Kennedy, PhD</i>                                                                                                |
| 10:30 AM – 10:45 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                                       |

Moderator: Adam Hartzell, MS

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|---------------------|------------|--------------------------------------------------------------------------------------------------------------------------|
| 10:45 AM – 11:05 AM | <b>K11</b> | <b>Attempts to Clone Stamp Impressions Via Stamps Produced by Additive Manufacturing</b><br><i>Tobin A. Tanaka, BSc*</i> |
| 11:05 AM – 11:25 AM | <b>K12</b> | <b>Bad Things Can Happen to Good Signatures</b><br><i>Linton Mohammed, PhD*</i>                                          |

# QUESTIONED DOCUMENTS

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| 11:25 AM – 11:45 AM | <b>K13</b> | <b>Chemometric and Spectroscopic Approaches in Questioned Document Examination</b><br><i>Vishal Sharma, PhD*</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 11:45 AM – 12:15 PM | <b>K14</b> | <b>FDE Forum</b><br><i>Carl R. McClary, MS*; Karen J. Nobles, MS; Samiah Ibrahim, BSc, BA</i>                                                                                 |
| 12:15 PM – 1:15 PM  |            | <b>BREAK</b>                                                                                                                                                                  |

## Questioned Documents Technical Session II

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Moderator: Mark Goff, BA

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|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:15 PM – 1:30 PM | <b>K15</b> | <b>Forensic Digital Document Examination: Moving Forward in a Post-Pandemic Society</b><br><i>Timothy Campbell, BSc*</i>                                                                                                                               |
| 1:30 PM – 1:45 PM | <b>K16</b> | <b>Quantifying Bayes Factors for Forensic Handwriting Evidence</b><br><i>Anyesha Ray, BS*; Danica M. Ommen, PhD</i>                                                                                                                                    |
| 1:45 PM – 2:15 PM | <b>K17</b> | <b>Quantifying Writer Variance Through Rainbow Triangle Graph Decomposition</b><br><i>Alexandra Arabio, BS*; Alicia Laura Carriquiry, PhD; Danica M. Ommen, PhD</i>                                                                                    |
| 2:15 PM – 2:35 PM | <b>K18</b> | <b>The Collection and Characterization of Counterfeit State Identity Cards and Driver's Licenses at the Homeland Security Investigations Forensic Laboratory</b><br><i>Luther S. Schaeffer, MFS, MS*; Elaine X. Wooton, MFS*</i>                       |
| 2:35 PM – 2:55 PM | <b>K19</b> | <b>The Discrimination and Characterization of Computer-Generated Printed Documents Using Energy-Dispersive X-Ray Fluorescence Spectroscopy Coupled With Chemometrics</b><br><i>Neha Verma, MSc, PhD*; Vishal Sharma, PhD; Dinesh K. Sahu, MSc, PhD</i> |
| 2:55 PM – 3:25 PM | <b>K20</b> | <b>The Hitler Diaries Revisited</b><br><i>Thomas W. Vastrick, BSc*</i>                                                                                                                                                                                 |
| 3:25 PM – 3:40 PM |            | <b>BREAK</b>                                                                                                                                                                                                                                           |

Moderator: Mark Goff, BA

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|-------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:40 PM – 4:25 PM | <b>K21</b> | <b>A Framework for the Creation of QuompenDium—The Mega-Site for All Things QD</b><br><i>Zain Bhaloo, MSc, BScH*</i>                                                                                    |
| 4:25 PM – 4:55 PM | <b>K22</b> | <b>A Proposal to Update SWGDOC Standards During the Transition Period: A Discussion</b><br><i>Thomas W. Vastrick, BSc*</i>                                                                              |
| 4:55 PM – 5:15 PM | <b>K23</b> | <b>An Update on Standards Development Activities Related to Forensic Document Examination</b><br><i>Kevin P. Kulbacki, MSFS*</i>                                                                        |
| 5:15 PM – 6:00 PM | <b>K24</b> | <b>New ASB Standards for Forensic Document Examiners: How They Differ From the Standards They Superseded and What You Need to Know to Use Them</b><br><i>Mark Goff, BA*; Stephanie Kingsbury, MSFS*</i> |

# TOXICOLOGY

## Wednesday

### Poster Session

|                   |            |                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7:30 PM – 9:00 PM | <b>L1</b>  | <b>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</b><br><i>Rebecca L. Smith, MS*</i> ; <i>Anthony P. DeCaprio, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                    |
| 7:30 PM – 9:00 PM | <b>L2</b>  | <b>4-Substituted AH-7921 Analogs: Isomer Selection During Synthesis and Pharmacological Profile</b><br><i>John L. Krstenansky, PhD, MBA*</i>                                                                                                                                                                                                                                                                      |
| 7:30 PM – 9:00 PM | <b>L3</b>  | <b>A Rare Case of Fatal Levamisole Toxicity</b><br><i>Mark E. Shelly, DO*</i> ; <i>Robert Johnson, PhD</i> ; <i>Aria McCall, BS</i> ; <i>Vanessa Lopez-Campos, BS</i>                                                                                                                                                                                                                                             |
| 7:30 PM – 9:00 PM | <b>L4</b>  | <b>A Mass Disaster Caused by Gas Leaks: A Case Report and a Forensic Workflow Proposal</b><br><i>Massimiliano Esposito, MD*</i> ; <i>Federica Ministeri, MD</i> ; <i>Salvatore Rocuzzo, MD</i> ; <i>Nunziata Barbera, MD</i> ; <i>Fabrizio Vanaria</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                             |
| 7:30 PM – 9:00 PM | <b>L5</b>  | <b>Postmortem Redistribution in Forensic Toxicological Investigations</b><br><i>Pietro Zuccarello, PhD*</i> ; <i>Monica Salerno, MD</i> ; <i>Massimiliano Esposito, MD</i> ; <i>Francesco Sessa, MS, PhD</i> ; <i>Nunziata Barbera, MD</i>                                                                                                                                                                        |
| 7:30 PM – 9:00 PM | <b>L6</b>  | <b>My Way: A Case of Lethal Intoxication of an Animal Euthanasia Drug in a Veterinary Doctor</b><br><i>Gianluca Musci, MD</i> ; <i>Alessandra Petruzzellis, MD</i> ; <i>Gianluca Gravili, MD</i> ; <i>Giorgio De Donno, MD</i> ; <i>Stefania Galizia, MD*</i> ; <i>Gianfrancesco Di Nunno, MD</i> ; <i>Antonio De Donno, MD</i>                                                                                   |
| 7:30 PM – 9:00 PM | <b>L7</b>  | <b>A Ten-Year (2013–2022) Retrospective Analysis of Road Traffic Deaths in the Northern Italian Region of Campania</b><br><i>Anna Carfora, PhD</i> ; <i>Alessandro Feola, MD, PhD*</i> ; <i>Raffaella Petrella, PhD</i> ; <i>Giusy Ambrosio, MD</i> ; <i>Stefano Festinese, MD</i> ; <i>Ilaria Fracassi, MD</i> ; <i>Paolo Palermo, MD</i> ; <i>Martina Zampone, MD</i> ; <i>Carlo Pietro Campobasso, MD, PhD</i> |
| 7:30 PM – 9:00 PM | <b>L8</b>  | <b>Trends in Neonatal Deaths From Fentanyl</b><br><i>Emily Fenton, MBA, MSFS*</i> ; <i>Kari M. Midthun, PhD</i> ; <i>Brianna Peterson, PhD</i>                                                                                                                                                                                                                                                                    |
| 7:30 PM – 9:00 PM | <b>L9</b>  | <b>WITHDRAWN</b>                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7:30 PM – 9:00 PM | <b>L10</b> | <b>A Complete Review of Propofol Misuse in the Health Care System and as a Drug of Abuse</b><br><i>Jidabha Apiluk, BS</i> ; <i>Sajeel Shah, PhD*</i> ; <i>Nikolas P. Lemos, PhD</i>                                                                                                                                                                                                                               |
| 7:30 PM – 9:00 PM | <b>L11</b> | <b>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</b><br><i>Jeri D. Roper-Miller, PhD*</i> ; <i>Megan Grabenauer, PhD</i> ; <i>Nichole D. Bynum, MS</i> ; <i>Nicolas Richardson, PhD</i>                                                           |
| 7:30 PM – 9:00 PM | <b>L12</b> | <b>Drops of Insanity? Tropicamide Recreational Usage: Early Warning Alarms in Forensic Science</b><br><i>Sushil Bhatt, PGDST*</i> ; <i>Jagmahender Singh Sehrawat, PhD</i> ; <i>Vishali Gupta, MS</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                              |

# TOXICOLOGY

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| 7:30 PM – 9:00 PM | <b>L13</b> | <b>Biofluid Sampler: A Promising Sampling and Sample Preparation Platform for Forensic Toxicological Investigations</b><br><br><i>Abuzar Kabir, PhD*</i> ; Marcello Locatelli, PhD; Kenneth G. Furton, PhD                                                                                                                                                    |
| 7:30 PM – 9:00 PM | <b>L14</b> | <b>Quantitation of Delta-8-Tetrahydrocannabinol in Postmortem Specimens by the Method of Standard Addition</b><br><br><i>Robert M. Lockwood, PhD*</i> ; Taikeria Adams, BS; Curt E. Harper, PhD                                                                                                                                                               |
| 7:30 PM – 9:00 PM | <b>L15</b> | <b>Fabric Phase Sorptive Extraction: A Green Sample Preparation Strategy for Forensic Toxicology</b><br><br><i>Abuzar Kabir, PhD; Kenneth G. Furton, PhD*</i> ; Marcello Locatelli, PhD                                                                                                                                                                       |
| 7:30 PM – 9:00 PM | <b>L16</b> | <b>A Comparative Analysis of Accuracy, Precision, and LOD in AAS and TMA for the Quantification of Cadmium in the Blood Samples</b><br><br><i>Jatin Kumar Drall, BTech*</i> ; Ajay Kumar Kataria, MTech                                                                                                                                                       |
| 7:30 PM – 9:00 PM | <b>L17</b> | <b>The Determination of Cadmium in Blood by Voltammetry Using Hanging Mercury Drop Electrode (HMDE)</b><br><br><i>Ashok Kumar Jaiswal, PhD*</i>                                                                                                                                                                                                               |
| 7:30 PM – 9:00 PM | <b>L18</b> | <b>Identifying Designer Benzodiazepines in Blood Using Gas Chromatography/Mass Spectrometry</b><br><br><i>Devin Baer*</i> ; Michael T. Truver, PhD; Sara C. Brogan, BS; Jennifer L. Hoyer, MS; Michele Crosby; Chris W. Chronister, PhD                                                                                                                       |
| 7:30 PM – 9:00 PM | <b>L19</b> | <b>The Impact of Gold Top SST (Gel and Clot) Collection Tubes on Cannabinoid Quantitative Analysis in Blood</b><br><br><i>Bridget O'Leary, MS; Marta Concheiro-Guisan, PhD*</i>                                                                                                                                                                               |
| 7:30 PM – 9:00 PM | <b>L20</b> | <b>Designer Benzodiazepine ELISA Cross-Reactivity</b><br><br><i>Leonela M. Placencia, BS*</i> ; Nicholas B. Tiscione, MS<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                                                                                       |
| 7:30 PM – 9:00 PM | <b>L21</b> | <b>EC-SERS and DART®-TOF/MS for Toxicological Screening</b><br><br><i>Colby E. Ott, PhD*</i> ; Edward Sisco, PhD                                                                                                                                                                                                                                              |
| 7:30 PM – 9:00 PM | <b>L22</b> | <b>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)</b><br><br><i>Munchelou M. Gomonit, BS*</i> ; Krystle McConnell, BA, MPH; Lauren M. Jansson, MD; Madeleine J. Swortwood, PhD |
| 7:30 PM – 9:00 PM | <b>L23</b> | <b>An Evaluation and Comparison of the Evidence MultiSTAT to GC/MS for the Detection of Morphine, Codeine, and Thebaine in Urine and Oral Fluid</b><br><br><i>Amanda L. Pacana, BS, MSFS*</i> ; Britni Skillman, PhD; Madeleine J. Swortwood, PhD; Stacie Terry, MSFS                                                                                         |
| 7:30 PM – 9:00 PM | <b>L24</b> | <b>An Investigation of Phthalate Levels in Teething Devices for Children in the United Arab Emirates</b><br><br><i>Vipula Aravamudhan*</i> ; Nrashant Singh; Deveshi Kachroo; Noora Najeeb                                                                                                                                                                    |
| 7:30 PM – 9:00 PM | <b>L25</b> | <b>The Validation of an LC/QqQ/MS Method for the Detection of Single Doses of Drugs in Hair</b><br><br><i>Kaylyn Ann Keith*</i> ; Anthony P. DeCaprio, PhD                                                                                                                                                                                                    |

# TOXICOLOGY

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| 7:30 PM – 9:00 PM | <b>L26</b> | <b>The Development of a Reference Material for Chemical Hair Analysis</b><br><i>Kaitlyn Bonilla, BS*</i> ; Charlene Harris, BS; Chloe Phillips; Matthieu Baudelet, PhD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                                    |
| 7:30 PM – 9:00 PM | <b>L27</b> | <b>Streamlining Blood LC/MS/MS Workflows to Meet ASB/OSAC Recommendations for Medicolegal Death and Impaired Driving Cases</b><br><i>Jason Truskowski, BS*</i>                                                                                                                                                                           |
| 7:30 PM – 9:00 PM | <b>L28</b> | <b>Streamlining Urine LC/MS/MS Workflows to Meet ASB/OSAC Recommendations for Drug-Facilitated Crime Investigations</b><br><i>Jason Truskowski, BS*</i>                                                                                                                                                                                  |
| 7:30 PM – 9:00 PM | <b>L29</b> | <b>“Hang on a Minute”: Developing Improved Separation Methodologies for Weakly Retained Polar Molecules in LC/MS/MS</b><br><i>Briana Rose Alarcon, BS*</i> ; William H. Campbell, PhD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                     |
| 7:30 PM – 9:00 PM | <b>L30</b> | <b>The Separation of Fentanyl Analog Geometric and Positional Isomers by LC/MS/MS</b><br><i>Erika L. Sitch, MPS*</i> ; Briana Rose Alarcon, BS*; William H. Campbell, PhD                                                                                                                                                                |
| 7:30 PM – 9:00 PM | <b>L31</b> | <b>What Are You Smoking? A Derivatization to Improve the Analysis of Tetrahydrocannabinol (THC) Isomers Via LC/MS/MS</b><br><i>Olesia Leonna Headen*</i> ; William H. Campbell, PhD<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                                                                                       |
| 7:30 PM – 9:00 PM | <b>L32</b> | <b>The Quantitation of 106 Drugs in Urine Using a High-Throughput, Seven-Minute Method by High Resolution Mass Spectrometry and Triple Quadrupole</b><br><i>Courtney Patterson*</i> ; Mark Tracy; Kristine van Natta; Stephanie Samra; Kerry Hassell<br>(FSF Emerging Forensic Scientist Award Poster Presentation)                      |
| 7:30 PM – 9:00 PM | <b>L33</b> | <b>Urine Immunoassay Cross-Reactivity of Various OTC and Prescription Drugs</b><br><i>Fatima Chavez-Esparza, BS*</i> ; Courtney Sellens, MS, BS; Qiyang Zhang, PhD; Melissa M. Bailey, MSFS, PhD; Timothy P. Rohrig, PhD; Connor DeJesus, MS, BS                                                                                         |
| 7:30 PM – 9:00 PM | <b>L34</b> | <b>Don’t Huff Before You Blow!</b><br><i>Genevieve Huppe, MSc*</i> ; Julie Motard, MSc; Cynthia Roy, MSc; Anthony Gelinas, BSc; Pascal Mireault, MSc                                                                                                                                                                                     |
| 7:30 PM – 9:00 PM | <b>L35</b> | <b>Evaluating Drug Positivity Trends in Fatally Injured Drivers, Passengers, and Pedestrians in Connecticut</b><br><i>Amanda L.A. Mohr, MS*</i> ; Grace Cieri, BS; James R. Gill, MD; Barry K. Logan, PhD                                                                                                                                |
| 7:30 PM – 9:00 PM | <b>L36</b> | <b>Drivers Under the Influence of Alcohol and Drugs: A Six-Year (2017–2022) Retrospective Analysis in a Southern Italian Region</b><br><i>Anna Carfora, PhD; Alessandro Feola, MD, PhD*</i> ; Raffaella Petrella, PhD; Giusy Ambrosio, MD; Ilaria Fracassi, MD; Paolo Palermo, MD; Martina Zampone, MD; Carlo Pietro Campobasso, MD, PhD |
| 7:30 PM – 9:00 PM | <b>L37</b> | <b>Pediatric Poisoning: A Plan of Action for Early Diagnosis and Treatment</b><br><i>Pascale Basilicata; Mariagrazia Marisei, MD; Rossella Guadagni; Angela Simonelli; Gaetano Di Donna, MD; Anita Sammarco, MD; Massimo Niola, PhD; Maria Pieri*</i>                                                                                    |
| 7:30 PM – 9:00 PM | <b>L38</b> | <b>The Effects of Ethanol on GABA Catabolism Via GABA-Transaminase</b><br><i>Mary Corrigan*</i> ; Robert H. Powers, PhD                                                                                                                                                                                                                  |

# TOXICOLOGY

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|-------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7:30 PM – 9:00 PM | <b>L39</b> | <b><i>Crotalus</i> Snake Venoms of North and South America: Their Symptoms, Treatments, and Potential Medical Applications</b><br><i>Victoria Hudson, MSc*; Sajeel Shah, PhD, MS; Nikolas P. Lemos, PhD</i> |
| 7:30 PM – 9:00 PM | <b>L40</b> | <b>A Review of Popular Illegal Performance-Enhancing Drugs in Sports and Gyms</b><br><i>Rami Abbas, BSc*; Sajeel Shah, PhD, MS; Nikolas P. Lemos, PhD</i>                                                   |
| 7:30 PM – 9:00 PM | <b>L41</b> | <b>An Evaluation of Long-Term Health Effects From Acute Exposure to Toxic Chemicals</b><br><i>Theresa Pennington*</i>                                                                                       |
| 7:30 PM – 9:00 PM | <b>L42</b> | <b>Future Strategies in Drug Trend Monitoring and Harm Reduction</b><br><i>Agnieszka Urban, BSc*; Geraldine Dowling, PhD, MSc; Sajeel Shah, PhD, MS; Nikolas P. Lemos, PhD</i>                              |
| 7:30 PM – 9:00 PM | <b>L43</b> | <b>A Review of Factors Affecting the Interpretability of Postmortem Cannabinoid Concentrations and Their Limitations</b><br><i>Sherri L. Kacinko, PhD; Daniel S. Isenschmid, PhD; Barry K. Logan, PhD*</i>  |

## Thursday

### Annual Lectureship in Toxicology

Moderator: Dayong Lee, PhD

Co-Moderator: Erin Karschner, PhD

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| 8:30 AM – 9:45 AM   | <b>L45</b> | <b>Annual Lectureship in Toxicology</b><br><i>Brandon Jeffery, MS*</i>                                     |
| 9:45 AM – 10:15 AM  | <b>L46</b> | <b>An Update on Standards Development Activities in Forensic Toxicology</b><br><i>Marc A. LeBeau, PhD*</i> |
| 10:15 AM – 10:30 AM |            | <b>BREAK</b>                                                                                               |

### Novel Psychoactive Substances

Moderator: Svante Vikingsson, PhD

Co-Moderator: Elisa Shoff, MS

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| 10:30 AM – 10:45 AM | <b>L47</b> | <b>Quantitation of Hexahydrocannabinol and Metabolites in Blood From Recreational Users</b><br><i>Robert Kronstrand, PhD*; Markus Roman; Henrik Gréen; Michael T. Truver, PhD</i>                                                                                                                                                |
| 10:45 AM – 11:00 AM | <b>L48</b> | <b>Determining Delta 9-THC Acetate Analog Metabolites Using Human Liver Microsomes to Determine the Structure and Rate of Metabolism</b><br><i>Natalie Ortiz, BS*; Justin L. Poklis, BS; Kimberly Karin, MS; Grace R.R. Williams, PhD; Carl E. Wolf, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i> |
| 11:00 AM – 11:15 AM | <b>L49</b> | <b>The Metabolism of THC-O-Acetate (THCO)—An Emerging Drug Threat</b><br><i>Ya-Chih (Jessica) Cheng, MS*; Charles R. Perkins, MS, BS; Sarah Kerrigan, PhD</i><br><i>(FSF Emerging Forensic Scientist Award Oral Presentation)</i>                                                                                                |

# TOXICOLOGY

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| 11:15 AM – 11:30 AM | <b>L50</b>   | <b>A Quantitative Confirmation Assay of New and Emerging Synthetic Cannabinoids by LC/QqQ/MS</b><br><i>Haley Lynn Bibey, BS*</i> ; Sara Walton, MS; Heather L. Harris, MFS, JD; Alex J. Krotulski, PhD<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                  |
| 11:30 AM – 11:45 AM | <b>L51</b>   | <b>A Case Series Involving the Synthetic Cathinone Alpha-PiHP in Postmortem Forensic Investigations</b><br><i>Sara Walton, MS*</i> ; 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  | <b>BREAK</b> |                                                                                                                                                                                                                                                                                                      |

## Multidisciplinary Session: Pathology/Biology and Toxicology

Moderator: Robert Johnson, PhD

Co-Moderator: Rhonda Mittenzwei, MD

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| 1:00 PM – 1:15 PM | <b>L52</b>   | <b>2C or Not Tusi? The Emergence of a New Drug Combination in Miami</b><br><i>Rocio Potoukian, BS*</i> ; Diane Moore, PhD; Kenneth Hutchins, DM<br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                    |
| 1:15 PM – 1:30 PM | <b>L53</b>   | <b>The Frequency and Analysis of Kratom in Postmortem Cases</b><br><i>William M. Schroeder, II, MS*</i> ; Donna M. Papsun, MS; Justin Brower                                                                                                                                                                                    |
| 1:30 PM – 1:45 PM | <b>L54</b>   | <b>Postmortem Diagnosis of Ketoacidosis: The Importance of Beta-Hydroxybutyrate Quantification as Part of Routine Toxicological Screening at Autopsy</b><br><i>Jeroen Roosendaal, PhD*</i> ; Astrid Christiaens, MD; Kiki Van Langen, MD; Ingrid Bosman, PhD, MSFS<br>(FSF Emerging Forensic Scientist Award Oral Presentation) |
| 1:45 PM – 2:00 PM | <b>L55</b>   | <b>A Case Series of Suicides by Sodium Azide Ingestion: An Update</b><br><i>Ingrid Bosman, PhD, MSFS*</i> ; Roelof Oosting, PharmD; Dick-Paul Kloos, PhD; Bart Ruiter; Jeroen Roosendaal, PhD; Kristof Maudens, PhD                                                                                                             |
| 2:00 PM – 2:15 PM | <b>178</b>   | <b>I Didn't Want to Kill Him! The Role of Cocaine in Pseudoasphyxia by Compression of the Carotid Sinus</b><br><i>Eleonora Mezzetti, MD*</i> ; Matteo Leoni, MD; Andrea Costantino, MD; Carla Occhipinti, MD; Rebecca Pieretti, MD; Aniello Maiese, MD                                                                          |
| 2:15 PM – 2:30 PM | <b>179</b>   | <b>Not So Much the "Spice" of Life: Identifying a Source for a Series of MDMB-4en-PINACA Deaths</b><br><i>Michael Chaump, MD*</i> ; 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 | <b>180</b>   | <b>Elevated Beta-Hydroxybutyrate Within a Pediatric Population and Its Associated Pathology: A Retrospective Case Series</b><br><i>Nasim Haghandish, MDCM, PhD*</i> ; Chris Milroy, MD, LLB; Jacqueline Parai, MD; Anthea Lafreniere, MD                                                                                        |
| 2:45 PM – 3:00 PM | <b>181</b>   | <b>Pediatric Fatalities Due to Methadone Toxicity in Cook County, Illinois: Considerations on the Manner of Death</b><br><i>Lorenzo Gitto, MD*</i> ; Daniel S. Isenschmid, PhD; Ponni Arunkumar, MD                                                                                                                             |
| 3:00 PM – 3:15 PM | <b>BREAK</b> |                                                                                                                                                                                                                                                                                                                                 |

# TOXICOLOGY

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## Drugs and Driving Special Session

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Moderator: Marilyn Huestis, PhD

Co-Moderator: Curt Harper, PhD

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|-------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3:15 PM – 3:30 PM | <b>L56</b> | <b>Ketamine in Driving Under the Influence of Drugs (DUID) Cases: 2015–2023</b><br><i>Amanda L. D’Orazio, MS*; Ayako Chan-Hosokawa, MS</i>                                                                               |
| 3:30 PM – 3:45 PM | <b>L57</b> | <b>DUID Cannabinoid Investigations: Blood, Oral Fluid, or Urine—Which Is the Superior Specimen?</b><br><i>Curt E. Harper, PhD*; Clarissa Lawen; Kristin Tidwell, BS; Gil Sapir, JD, MSc</i>                              |
| 3:45 PM – 4:00 PM | <b>L58</b> | <b>The Detection of Cannabinoids in Exhaled Breath Condensate After Cannabis Use</b><br><i>Jennifer L. Berry, PhD*; Kavita M. Jeerage, PhD; Cheryle N. Beuning, PhD; Ashley Brooks-Russell, PhD; Tara Lovestead, PhD</i> |
| 4:00 PM – 4:15 PM | <b>L59</b> | <b>Cocaine and Benzoyllecgonine in Blood and Oral Fluid of DUID Cases (2018–2022)</b><br><i>Michael L. Weaver*; Clarissa Lawen; Christopher Bartle; Curt E. Harper, PhD</i>                                              |
| 4:15 PM – 4:30 PM | <b>L60</b> | <b>Mile High: A Five-Year Review of Fentanyl Trends in Colorado Impaired Driving Cases</b><br><i>Stephanie Olofson, BS, MS*</i>                                                                                          |
| 4:30 PM – 4:45 PM | <b>L61</b> | <b>Impaired Driving Cases With Bromazolam</b><br><i>Nicholas B. Tiscione, MS*; Edward Zumaeta</i>                                                                                                                        |

## Friday

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## General Forensic Toxicology

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Moderator: Chris Heartsill, BSc

Co-Moderator: Aaron Shapiro, PhD

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| 8:30 AM – 8:45 AM | <b>L62</b> | <b>An Outlook on Fentanyl Adulteration: Polydrug Circumstances, Trends, and Tomorrow’s Forecast</b><br><i>Alex J. Krotulski, PhD*; Sara Walton, MS; Donna M. Papsun, MS; Joshua S. DeBord, PhD; Barry K. Logan, PhD</i>                                                                                                                      |
| 8:45 AM – 9:00 AM | <b>L63</b> | <b>Controlled Oral Kratom Leaf Administration to Healthy Humans: Abuse Potential- and Withdrawal-Related Effects, Adverse Events, and Mitragynine and 7-Hydroxy-Mitragynine Plasma Pharmacokinetics</b><br><i>Marilyn A. Huestis, MS, PhD*; John Bothmer, PhD; Thomas Hudzik, MS, PhD; Jack E. Henningfield, BA, PhD; Ramsey Atallah, BA</i> |
| 9:00 AM – 9:15 AM | <b>L64</b> | <b>The Extraction’s Always Greener on the Other Side</b><br><i>Madeleine E. Wood, MS*; Joshua Z. Seither, PhD; John J. Kristofic, BS; Erin Karschner, PhD; Jeffrey P. Walterscheid, PhD</i>                                                                                                                                                  |
| 9:15 AM – 9:30 AM | <b>L65</b> | <b>Homoamphetamine: A Cautionary Tale</b><br><i>Laura Friederich, BS*; Sandra Bishop-Freeman, PhD</i>                                                                                                                                                                                                                                        |
| 9:30 AM – 9:45 AM | <b>L66</b> | <b>The Bath Salts State: A Comprehensive Review of Substituted Cathinones in Miami From 2011 to 2023</b><br><i>Elisa N. Shoff, MS*; Zaney E. Mary, BS; Diane Moore, PhD</i>                                                                                                                                                                  |

# TOXICOLOGY

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|---------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9:45 AM – 10:00 AM  | <b>L67</b> | <b>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</b><br><i>Jennifer Gonyea, BS*</i> ; <i>Diane Moore, PhD</i>                                                                                |
| 10:00 AM – 10:15 AM | <b>L68</b> | <b>Segmented Workflows and the Confrontation Clause: Achieving Congruence Between Constitutional Guarantees, Laboratory Productivity, and Toxicological Expertise</b><br><i>M.J. Menendez, JD*</i> ; <i>Barry K. Logan, PhD</i> ; <i>Daniel T. Anderson, MS</i> ; <i>Donna M. Papsun, MS</i> |
| 10:15 AM – 10:30 AM |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                 |

## Alternative Matrices

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Moderator: Marta Concheiro-Guisan, PhD

Co-Moderator: F. Wayne Lewallen, BS

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|---------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10:30 AM – 10:45 AM | <b>L69</b> | <b>A Quantitative Analysis of Cannabis Exposure Biomarkers in Exhaled Breath Condensate and Oral Fluid</b><br><i>Meena Swaminathan, MSFS*</i> ; <i>Anthony P. DeCaprio, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                                                                                                                                                                                               |
| 10:45 AM – 11:00 AM | <b>L70</b> | <b>The Use of Hair Analysis as a Potential Predictor of Tolerance in Decedents With High Fentanyl Concentrations in Fentanyl-Related Deaths: Preliminary Results</b><br><i>Nicola Pigaiani, MD*</i> ; <i>Marco Ballotari, PhD, MA</i> ; <i>Brandi C. McCleskey, MD</i> ; <i>Francesco Taus, PhD</i> ; <i>Federica Bortolotti, MD, PhD</i> ; <i>Rossella Gottardo, PhD</i> ; <i>Gregory G. Davis, MD, MSPH</i> ; <i>Karen S. Scott, PhD</i> |
| 11:00 AM – 11:15 AM | <b>L71</b> | <b>A Quantitative Assessment of Five Hair Drug Testing Laboratories With a Commercial Hair Reference Material</b><br><i>Edwin Dale Hart, BS*</i> ; <i>Svante Vikingsson, PhD</i> ; <i>Ruth E. Winecker, PhD</i> ; <i>Eugene D. Hayes, PhD</i> ; <i>Lisa S. Davis, MS</i> ; <i>Ron Flegel, MS</i>                                                                                                                                           |
| 11:15 PM – 11:30 AM | <b>L72</b> | <b>The Gonadotoxic Effects of Tobacco Smoking on Human Seminal Fluid</b><br><i>Nadeem-Ul-Hassan Khan*</i> ; <i>Allah Rakha*</i> ; <i>Rahat Abdul Rehman*</i> ; <i>Shahid Nazir, PhD</i> ; <i>Tahmina Rehman</i>                                                                                                                                                                                                                            |
| 11:30 AM – 11:45 AM | <b>L73</b> | <b>The Identification of the New Synthetic Opioid N-Piperidinyl Etonitazene (Etonitazepipne) in Postmortem Alternative Matrices</b><br><i>Erika Buratti, PhD*</i> ; <i>Gianmario Mietti, PhD</i> ; <i>Alice Cerioni, PhD</i> ; <i>Marta Cippitelli, PhD</i> ; <i>Rino Frolidi, MSc</i> ; <i>Mariano Cingolani, MD, MSc</i> ; <i>Roberto Scendoni, PhD</i><br>(FSF Emerging Forensic Scientist Award Oral Presentation)                     |
| 11:45 AM – 1:00 PM  |            | <b>BREAK</b>                                                                                                                                                                                                                                                                                                                                                                                                                               |

## 23rd Annual Postmortem Pediatric Forensic Toxicology Session

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Moderator: Robert Middleburg, PhD

Co-Moderator: Nikolas P. Lemos, PhD

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|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM – 3:00 PM | <b>L74</b> | <b>Postmortem Pediatric Forensic Toxicology</b><br><i>Robert A. Middleberg, PhD*</i> ; <i>Nikolas P. Lemos, PhD*</i> ; <i>Katherine Kenerson, MD*</i> ; <i>Andrew Baker, MD*</i> ; <i>Sterling J. McLaren, MD*</i> ; <i>Diane Moore, PhD*</i> ; <i>Mary Zaney, BS*</i> |
|-------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# LAST WORD SOCIETY

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## *Thursday*

Moderator: Kenneth Melson, JD

Co-Moderator: Carla Noziglia, MS

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|---------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 PM – 8:20 PM   | <b>LW1</b> | <b>A Forensic Analysis of the 1960 Rome Olympics' 100-Meter Dash Final</b><br><i>John David Bullock, MD, MPH*</i> ; <i>Gerald H. Ashworth, MBA</i> ; <i>David Guyton, MD</i> |
| 8:20 PM – 8:40 PM   | <b>LW2</b> | <b>The Strange Deaths of American Presidents</b><br><i>Lawrence Quarino, PhD*</i>                                                                                            |
| 8:40 PM – 9:00 PM   | <b>LW3</b> | <b>(De)coronation Jewels: The “Affair of the Diamond Necklace” Between Historical and Forensic Implications</b><br><i>Matteo Borrini, PhD, MS*</i>                           |
| 9:00 PM – 9:20 PM   | <b>LW4</b> | <b>Man vs. “Gator” – The Forensic Story • The “Media” Story</b><br><i>Walter F. Zoller, DMD*</i>                                                                             |
| 9:20 PM – 9:40 PM   | <b>LW5</b> | <b>The First Full-Service Criminalistics Laboratory: Scientific Detection Laboratory, Chicago, IL</b><br><i>Peter Striupaitis, MS*</i>                                       |
| 9:40 PM – 10:00 PM  | <b>LW6</b> | <b>Will Hatred Never Die? The Murder of Bishop William Alexander Guerry</b><br><i>J.C.U. Downs, MD*</i>                                                                      |
| 10:00 PM – 10:20 PM | <b>LW7</b> | <b>The Unknown Child on the Titanic: Identified! Identified?</b><br><i>Colleen M. Fitzpatrick, PhD*</i>                                                                      |

# YFSF POSTER SESSION

## Wednesday

### Digital & Multimedia Sciences

|                    |           |                                                                                                                                                                                                                                                 |
|--------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y1</b> | <b>The Forensic Acquisition and Inspection of Aftermarket Vehicle Infotainment Systems</b><br><i>Jett Brandes, MD*</i> ; Andrew Clark; Robert Boggs, APS                                                                                        |
| 11:30 AM – 1:00 PM | <b>Y2</b> | <b>The Impact of Zoom on Smart Phone Camera Identification</b><br><i>Gavin Norton*</i> ; Stephanie Reinders, PhD                                                                                                                                |
| 11:30 AM – 1:00 PM | <b>Y3</b> | <b>Known Hash Filtering: An Efficient Way to Eliminate Irrelevant Files and Show Files of Interest in Digital Examinations</b><br><i>Jessica A. Smith, BS*</i> ; Lyndsay Haak, MS; Timothy G. Suggs, BS; James Trevillian, BS; Josh Brunty, ScD |
| 11:30 AM – 1:00 PM | <b>Y4</b> | <b>Producing Datasets: Capturing Images on Multi-Camera Smart Phones for Source Camera Identification</b><br><i>Megan McGuire*</i> ; Stephanie Reinders, PhD                                                                                    |

### Toxicology

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|--------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y5</b>  | <b>The Quantification of Alcohols and Acetaldehyde in Hand Sanitizers Using Headspace/Gas Chromatography/Mass Spectrometry</b><br><i>Ngoc Diem Kieu To, BS*</i> ; Jacob A. Theruvathu                                                                                                 |
| 11:30 AM – 1:00 PM | <b>Y6</b>  | <b>The Development and Validation of a Biotage® Extrahera™ Automated Extraction Method of Opioids and Their Metabolites in Human Urine Using LC/MS/MS</b><br><i>Jessica M. Braeunle, BS*</i> ; Marianne Staretz, PhD; Nadine M. Koenig; Dean Fritch, PhD; Thomas A. Brettell, MS, PhD |
| 11:30 AM – 1:00 PM | <b>Y7</b>  | <b>The Death of an Accused Person in a Court After the Announcement of the Verdict</b><br><i>Massinissa Benyagoub*</i> ; Mohamed Oualid; Djamil Azzouz; Redouane Benazzouz                                                                                                            |
| 11:30 AM – 1:00 PM | <b>Y8</b>  | <b>The Use of Novel Psychoactive Substances (NPS) in Italy: A Comprehensive Meta-Analysis</b><br><i>Muhammad Usman, PhD, MS*</i> ; Donatella Nardiello; Christian Pallante; Donatella Curtotti; Maurizio Quinto                                                                       |
| 11:30 AM – 1:00 PM | <b>Y9</b>  | <b>Monitoring the New England Drug Supply Through Novel Drug Checking Methods</b><br><i>Max T. Denn, MS*</i> ; Joshua S. DeBord, PhD; Alexis D. Quinter, MS; Barry K. Logan, PhD; Alex J. Krotulski, PhD                                                                              |
| 11:30 AM – 1:00 PM | <b>Y10</b> | <b>An Evaluation of Postmortem Redistribution of <math>\Delta^9</math>-Tetrahydrocannabinol (THC) and 11-Nor-9-Carboxy-THC (THC-COOH)</b><br><i>Isabelle Chevrier, BSc*</i> ; Betty Chow, MSc; Brent Cahill, MSc; James Watterson, PhD                                                |
| 11:30 AM – 1:00 PM | <b>Y11</b> | <b>Chemiluminescent Detection Limitations of Cannabinoids in Edibles and Urine Samples</b><br><i>Cristina Elisabeth Lemus*</i>                                                                                                                                                        |
| 11:30 AM – 1:00 PM | <b>Y12</b> | <b>Method Development for a Quantitative Panel of Psychoactive Adulterants in Biological Matrices using LC/MS/MS</b><br><i>Shayna R. Kasher, BS*</i>                                                                                                                                  |

# YFSF POSTER SESSION

## Thursday

### Criminalistics

|                    |            |                                                                                                                                                                                                                                                                                                              |
|--------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y13</b> | <b>Body Fluid Identification From Mixed Samples and Male DNA Confirmation Utilizing SERATEC® PSA and PMB Tests</b><br><i>Scarlet Tabitha Neilson, BS*</i> ; <i>Lindsay Loughner Kotchey, MS</i> ; <i>Mirna Ghemrawi, PhD, MSFS</i> ; <i>M. Gabriela Roca, MSc, PhD</i> ; <i>Leah Nangeroni, BS</i>           |
| 11:30 AM – 1:00 PM | <b>Y14</b> | <b>Exploring the Performance of an Initial Set of DIP-STR Markers for Biogeographic Ancestry Prediction in United States Populations</b><br><i>Lauren Hoopes, BS*</i> ; <i>Diana Hall, MA</i> ; <i>Fabio Oldoni, MS</i>                                                                                      |
| 11:30 AM – 1:00 PM | <b>Y15</b> | <b>An Internal Validation of the Janovsky Color Test and Testing the Platinum Chloride Microcrystalline Method for Benzodiazepines</b><br><i>Allison M. Swigart, BS*</i> ; <i>Lauren L. Richards-Waugh, PhD</i> ; <i>Kathleen Schell</i> ; <i>Rebecca Barlag, PhD, MS</i> ; <i>Lyndsay B. Cone, MS, BS</i>   |
| 11:30 AM – 1:00 PM | <b>Y16</b> | <b>The Use of Leaf Spray PSI-MS for the Detection of Kratom (<i>Mitragyna Speciosa</i>) Leaf</b><br><i>Macenzie Hope Powell, MS, BA*</i> ; <i>Michael Van Stipdonk, BA, PhD</i> ; <i>Stephanie J. Wetzel, PhD</i> ; <i>Theodore A. Corcovilos, PhD</i> ; <i>Hannah Zimmerman-Federle, MS</i>                 |
| 11:30 AM – 1:00 PM | <b>Y17</b> | <b>The Effects of Fingerprint Development Techniques on Forensic Cartridge Case Identification</b><br><i>Sasha L. Valentino, BA*</i> ; <i>Lyndsie N. Ferrara, PhD</i> ; <i>Missy Meredith</i> ; <i>Sarah Varhola, MS</i> ; <i>Stephanie J. Wetzel, PhD</i>                                                   |
| 11:30 AM – 1:00 PM | <b>Y18</b> | <b>The Impact of Age on Strength and Fracture Patterns of the Human Hyoid Bone</b><br><i>Olivia DePergola, BA*</i> ; <i>Pamela Marshall, PhD</i> ; <i>John A. Viator, PhD</i> ; <i>Suvendra Vijayan, BDS, MS</i> ; <i>Jennifer L. Hammers, DO</i>                                                            |
| 11:30 AM – 1:00 PM | <b>Y19</b> | <b>Surveillance Efforts to Track Drug Market Changes in Philadelphia, Pennsylvania</b><br><i>Alexis D. Quinter, MS*</i> ; <i>Joshua S. DeBord, PhD</i> ; <i>Max T. Denn, MS</i> ; <i>Barry K. Logan, PhD</i> ; <i>Alex J. Krotulski, PhD</i>                                                                 |
| 11:30 AM – 1:00 PM | <b>Y20</b> | <b>The Detection of Low Concentration Ignitable Liquid Residues From Fire Debris Using Gas Chromatography/Mass Spectrometry and an Ignitable Liquid Detection Canine</b><br><i>Abigail V. Burke, BA*</i> ; <i>Nancy A. Love, BS</i> ; <i>Matthew Regentin, MS</i> ; <i>Stephanie J. Wetzel, PhD</i>          |
| 11:30 AM – 1:00 PM | <b>Y21</b> | <b>An Analysis of Drug Content Distribution on Paper Using Both Soak and Spray Methods by Gas Chromatography/Mass Spectrometry (GC/MS)</b><br><i>Aizlynn M. Michel, BA*</i> ; <i>Hannah J. Spitzer, MS</i> ; <i>Ashley N. Ebert, PhD, BS</i> ; <i>Stephanie J. Wetzel, PhD</i>                               |
| 11:30 AM – 1:00 PM | <b>Y22</b> | <b>Examining the Effects of Thermal Stress on the Structure and Downstream DNA Analysis of Human Teeth</b><br><i>Michael Allie Brivchik, BA*</i> ; <i>Pamela Marshall, PhD</i> ; <i>Jennifer L. Hammers, DO</i> ; <i>Rhonda K.K. Roby, PhD, MPH</i> ; <i>Lisa R. Ludvico, PhD</i> ; <i>Angie Ambers, PhD</i> |
| 11:30 AM – 1:00 PM | <b>Y23</b> | <b>An Analysis of the Transfer of Drugs to the Envelope in Mail Over Time and Varying Conditions</b><br><i>Madison Ann Eidemueller, BS*</i> ; <i>Erica Maney, MSc</i> ; <i>Christopher Merrill, BA, MS</i> ; <i>Stephanie J. Wetzel, PhD</i>                                                                 |

# YFSF POSTER SESSION

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|--------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y24</b> | <b>Investigation and Detection Methods for Digital and Penile Penetration With No Ejaculation</b><br><i>Brianna Gregory, BS*; Janine M. Kishbaugh, MS; Lawrence Quarino, PhD; Amrita Lal-Paterson</i>                                              |
| 11:30 AM – 1:00 PM | <b>Y25</b> | <b>Identifying the Presence of Semen Through the Detection of Fructose</b><br><i>Taylor M. McClure, BS*; Emily Chadwick, MS; Pamela Marshall, PhD; Michael I. Jensen-Seaman, PhD</i>                                                               |
| 11:30 AM – 1:00 PM | <b>Y26</b> | <b>Addressing Sexual Assault in Pakistan: Insights From an Analysis of Female Survivors at Lahore General Hospital</b><br><i>Muhammad Ahmad Faraz, MBBS*</i>                                                                                       |
| 11:30 AM – 1:00 PM | <b>Y27</b> | <b>A Gunshot Residue Analysis: The Development of a Combined Procedure for the Detection of Inorganic Elements and Organic Compounds in Traditional and Clean Range Ammunitions Using Spectroscopic Methods</b><br><i>Zaire Elijah Fabian, BS*</i> |
| 11:30 AM – 1:00 PM | <b>Y28</b> | <b>The Recovery of Human DNA in an Aqueous Environment Using Novel Technology</b><br><i>Halle E. Saf, BS*; Pamela Marshall, PhD; Lisa R. Ludvico, PhD; Samantha Border</i>                                                                         |
| 11:30 AM – 1:00 PM | <b>Y29</b> | <b>The Optimization of DNA Extraction Methods From Alternative Reference Materials</b><br><i>Sophie S. Lee, BS*; Leah Nangeroni, BS; Lindsay Loughner Kotchey, MS; Mirna Ghemrawi, PhD, MSFS</i>                                                   |
| 11:30 AM – 1:00 PM | <b>Y30</b> | <b>Assessing the Impact Dynamics of Less Lethal Bean Bag Ammunition</b><br><i>Brook Fontaine*</i>                                                                                                                                                  |
| 11:30 AM – 1:00 PM | <b>Y31</b> | <b>A Comprehensive Examination of STR and Y-STR Profiling in Samples With Limited or Negligible DNA Quantities</b><br><i>Chih-Wen Su*</i>                                                                                                          |
| 11:30 AM – 1:00 PM | <b>Y32</b> | <b>A Landscape Study: Investigating Potential Links Between Adoption and Serial Killers</b><br><i>Amanda F. Piccirilli, BA*; Pamela Marshall, PhD; Lyndsie N. Ferrara, PhD; Colleen M. Fitzpatrick, PhD</i>                                        |
| 11:30 AM – 1:00 PM | <b>Y33</b> | <b>The Recovery of Nuclear DNA From Skeletal Remains Decomposed in Freshwater</b><br><i>Zoe L. Sikon, BS*; Ashley G. Morgan, PhD</i>                                                                                                               |

## Forensic Nursing Science

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|--------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y34</b> | <b>Examining the Presence of Foreign DNA on Neck Swabs</b><br><i>Alexa M. Gonzalez Morales*; Lyndsie N. Ferrara, PhD; Lisa R. Ludvico, PhD</i> |
|--------------------|------------|------------------------------------------------------------------------------------------------------------------------------------------------|

## Odontology

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|--------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y35</b> | <b>Allied Dental Professionals' Identification Accuracy of Burned Teeth</b><br><i>Brenda Tallon Bradshaw, BSDH, MS*; Marsha A. Voelker, MD; Samantha Vest, MS; Sinjini Sikdar, PhD</i> |
|--------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

# YFSF POSTER SESSION

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## Psychiatry & Behavioral Science

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- 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

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- 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

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- 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\**

# YFSF POSTER SESSION

## Engineering & Applied Sciences

- 11:30 AM – 1:00 PM      **Y48**      **A Digital Microfluidic Approach to Processing Forensic Samples**  
*Leticia Bodo, MSc\**; *Mohamed Elsayed, MSc*; *Jonathan S. Millman, BSc, PhD*;  
*Aaron Wheeler, PhD*

## General

- 11:30 AM – 1:00 PM      **Y49**      **A Call for Community: Working Toward Humanitarian Solutions to Address Inadequate Indigenous Death Investigations in North America**  
*Steff King, MA\**; *Gail S. Anderson, PhD*
- 11:30 AM – 1:00 PM      **Y50**      **A Probabilistic Genotyping Analysis of Trace DNA and Transfer Evidence**  
*Charis Ann Hickey, BS\**; *Kelly J. Beatty, MSFS*; *Amy K. Smith, MS*; *Eric Miller, MS*
- 11:30 AM – 1:00 PM      **Y51**      **A Semi-Automatic Tool for Footwear Impression Alignment**  
*Hana Lee, BS\**; *Alicia Laura Carriquiry, PhD*
- 11:30 AM – 1:00 PM      **Y52**      **An Interdisciplinary Approach for the Identification of Antique Skeletal Teaching Specimens: DNA Extraction, Forensic Bone Standards, and X-Ray Analysis**  
*Cynthia Nichols\**
- 11:30 AM – 1:00 PM      **Y53**      **Trend Identification in X-Ray Diffraction Peaks of Historic Cartridge Cases From Fort Ord, California**  
*Sarina Regis\**; *Katelyn K. Huie\**; *Madison R. Loewen\**; *McKenzie Floyd, MS*
- 11:30 AM – 1:00 PM      **Y54**      **A Qualitative Analysis of Xylazine, Nitazenes, and Common Opioids/Analogues by Liquid Chromatography/Tandem Mass Spectroscopy (LC/MS/MS) Following Collection With the M-Vac® Wet-Vacuum System**  
*Madeline I. L. Robinson, BS\**; *Lauren L. Richards-Waugh, PhD*; *Catherine Rushton, MSFS, EdD*
- 11:30 AM – 1:00 PM      **Y55**      **Can the Use of Sharpies® in Forensic Analysis Be a Source of DNA Transfer and Contamination When Examining Difference Fabric Types?**  
*Haley Elizabeth Murphy, BS\**; *Pamela Marshall, PhD*

## Pathology/Biology

- 11:30 AM – 1:00 PM      **Y56**      **The Validation of a Manual Selective Degradation Method of Differential Extraction**  
*Katelyn Peyton, MS\**; *Kelly J. Beatty, MSFS*; *Amy K. Smith, MS*
- 11:30 AM – 1:00 PM      **Y57**      **Getting Down and Dirty: Analyzing Changes in Soil Microbiota During Three Stages of Mouse Decomposition**  
*Madeline Robinson\**; *Emily Nowicki, PhD, BS*; *Samantha J. Sawyer, PhD, BS*
- 11:30 AM – 1:00 PM      **Y58**      **A Commotio Cordis Case After a Fall From Height**  
*Hakan Isik*; *Ilkay Kalkanli\**; *Gözde Şirin*; *Ahmet Depreli, MD*; *Selçuk Çetin*
- 11:30 AM – 1:00 PM      **Y59**      **Comparing 3D Photogrammetry Models Created Using Either Routinely Acquired Autopsy Photographs or Those Taken Specifically for Photogrammetry**  
*Malgorzata Pietrzak\**; *Anja Petaros*; *Anders Persson, MD, PhD*

# YFSF POSTER SESSION

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|                    |            |                                                                                                                                                                                                                                                     |
|--------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11:30 AM – 1:00 PM | <b>Y60</b> | <b>Fun Run the Bowel: Two Cases of Fatal Gastrointestinal Hemorrhage From Duodenal Ulcers</b><br><i>Jessica Schmitt, MD*</i> ; <i>Neil G. Haycocks, MD, PhD</i>                                                                                     |
| 11:30 AM – 1:00 PM | <b>Y61</b> | <b>Impacts of Desiccants on DNA Quantity and Quality in Sexual Assault Kits Over a One-Year Period</b><br><i>Catherine F. Hull, BA*</i> ; <i>Randy Nagy, BS</i> ; <i>Dana Voris, MS</i> ; <i>Lisa R. Ludvico, PhD</i> ; <i>Pamela Marshall, MFS</i> |
| 11:30 AM – 1:00 PM | <b>Y62</b> | <b>The Identification of Biomarkers Associated With Prolonged Starvation in Cat (<i>Felis Catus</i>) Bones</b><br><i>Annagrace J. Radocaj, BS*</i> ; <i>Lisa R. Ludvico, PhD</i> ; <i>Becky Morrow, DVM, MS</i>                                     |
| 11:30 AM – 1:00 PM | <b>Y63</b> | <b>A Low-Cost Microfluidic Biochip Integrated With LAMP for the Rapid Detection of <i>Streptococcus Pneumoniae</i> to Aid in Forensic Pathology</b><br><i>Angel Gabriel Gutierrez Ruiz*</i>                                                         |
| 11:30 AM – 1:00 PM | <b>Y64</b> | <b>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</b><br><i>Hind Abouzahir, MD, PhD*</i>                                               |

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# BRING YOUR OWN SLIDES (PowerPoint®) BYOS.ppt

Wednesday Evening: 8:00 p.m. - 10:00 p.m.

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 Scientific 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 CD or 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 21, 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 #: \_\_\_\_\_

U.S. 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: \_\_\_\_\_