

**PROGRAM**

# American Academy of Forensic Sciences 75th Anniversary Conference



# Science Works

February 13-18, 2023  
 Orlando, Florida  
 Rosen Shingle Creek Hotel & Convention Center

Toxicology

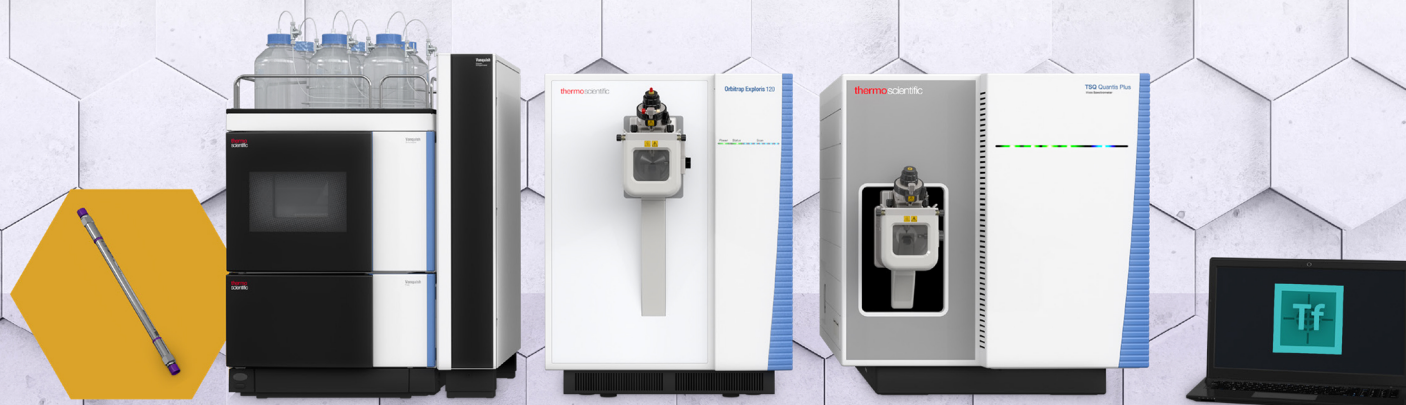
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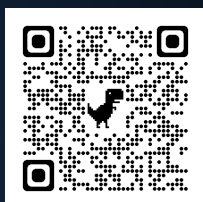
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# WELCOME LETTER

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Welcome to the 75th AAFS Annual Scientific Conference in Orlando, Florida. This year we are celebrating our Diamond Jubilee and will have many fun and interesting events to honor this important milestone. This will be our first in-person-only meeting since Anaheim, and I am really looking forward to greeting you as we gather at the Rosen Shingle Creek. The program is bursting with content aligned with the meeting theme, “Science Works.” I chose this theme to honor our members and other attendees who work at science every day and to focus on the importance of demonstrating that when performed and interpreted using reliable, repeatable methods, science answers questions about ourselves and can be trusted to make critical decisions at all levels of society, from the White House to your house. This meeting is a celebration of forensic science and a tangible representation of its impact in our world.



*Laura C. Fulginiti, PhD*

There are so many highlights this week and I encourage you to review the program (online at [www.aafs.org](http://www.aafs.org)) to start planning your activities. We kick off the week with a

Sunday Super Bowl Party, the first of many celebratory events that will be capped off with the Friday evening tropically-themed gala. We have two additional receptions, the Welcome Reception and the Wine and Cheese Reception, as well as one for our International Attendees on Monday evening. Our keynote speaker, Scott Griffith, will discuss how successful collaborations (like AAFS) can improve reliability. He is followed by the Plenary session focused on the role of forensic medicine in forensic science. Our Interdisciplinary Symposium reviews the history of the Academy, and there will be a special session highlighting the Humanitarian and Human Rights Resource Center. Similarly, the AAFS Diversity Outreach Committee will be holding a reception and lecture featuring Rook E. Ringer, a forensic scientist-turned-attorney. We have workshops, scientific presentations, and affiliate and committee meetings—never a dull moment. Our committees have worked tirelessly to move the Academy forward, and I am indebted to them for their efforts.

We welcome high school students to our Student Academy, a great opportunity to introduce them to the wonders of forensic science, as well as to our Young Forensic Scientist Forum, a place for networking and mentorship. We have the Last Word Society and the Bring Your Own Slides forum, and don't forget the Annual Business Meeting on Wednesday. This is where the business of the Academy takes place and where decisions regarding the future of the AAFS happen. Make sure you're “in the room where it happened!”

When you see our staff around the convention center, please take a moment to thank them for the work they perform on behalf of the Academy membership. Truly, there would be no AAFS, no meeting, no progress, no nothing, without their dedication and commitment. We owe them a huge debt.

This meeting is an important milestone in our history. All of science continues to undergo attacks, both from within and from the outside. We need to stand up and defend our methods, our interpretations, and our results. We need to speak for forensic science because if we don't, who will? This meeting is your opportunity to stand and be heard. Welcome to Orlando!

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# OFFICERS AND OFFICIALS

## Officers

*President:* Laura C. Fulginiti, PhD  
*President-Elect:* C. Ken Williams, MS, JD  
*Past President:* Carl R. McClary, MS  
*Vice President:* Christopher R. Thompson, MD  
*Treasurer:* Joanna L. Collins, MFS  
*Secretary:* James L. Caruso, MD

## Directors

*Anthropology:* Kristen Hartnett-McCann, PhD  
*Criminalistics:* Matthew R. Wood, PhD  
*Digital & Multimedia Sciences:* Marla E. Carroll, BS  
*Engineering & Applied Sciences:* Mark I. Marpet, PhD, PE  
*Forensic Nursing Science:* Jamie Ferrell, MBA  
*General:* Claire E. Shepard, MS  
*Jurisprudence:* Pamela A.W. King, JD  
*Odontology:* Gary L. Bell, DDS  
*Pathology/Biology:* Chris Milroy, MD, LLB  
*Psychiatry & Behavioral Science:* Dean De Crisce, MD  
*Questioned Documents:* Linton A. Mohammed, PhD  
*Toxicology:* Sarah Kerrigan, PhD

## Section Officers

### Anthropology

*Chair:* Allysha P. Winburn, PhD  
*Secretary:* Krista E. Latham, PhD

### Criminalistics

*Chair:* Jason L. Linder, MFS  
*Secretary:* Peter J. Diaczuk, PhD

### Digital & Multimedia Sciences

*Chair:* Patrick A. Eller, MS  
*Secretary:* Kathryn Seigfried-Spellar, PhD

### Engineering & Applied Sciences

*Chair:* Sarah V. Hainsworth, PhD  
*Secretary:* Carole E. Chaski, PhD

### Forensic Nursing Science

*Chair:* Joyce P. Williams, DNP  
*Secretary:* Amy Y. Carney, PhD

### General

*Chair:* Melissa A. Connor, PhD  
*Secretary:* Brian L. Janysek, MFS

### Jurisprudence

*Chair:* Gil Sapir, JD  
*Secretary:* Christopher J. Plourd, JD

### Odontology

*Chair:* Robin A. Ainsworth, DDS  
*Secretary:* Denise C. Murmann, DDS

### Pathology/Biology

*Chair:* Jacqueline L. Parai, MD  
*Secretary:* Chris Milroy, MD, LLB

### Psychiatry & Behavioral Science

*Chair:* Sebastien S. Prat, MD  
*Secretary:* Giuseppe Troccoli, MD

### Questioned Documents

*Chair:* Karen J. Nobles, MFS  
*Secretary:* James A. Green, BS

### Toxicology

*Chair:* Madeleine J. Swortwood, PhD  
*Secretary:* Amanda L.A. Mohr, MSFS

## 2023 Program Committee

<i>Program Chair:</i>	Kristen Hartnett-McCann, PhD	<i>Criminalistics:</i>	Sheree R. Hughes, PhD
<i>Program Co-Chair:</i>	Matthew R. Wood, PhD		Agnes D. Winokur, MS
<i>Plenary Session:</i>	James R. Gill, MD	<i>Digital &amp; Multimedia Sciences:</i>	Joseph Levi White, PhD
	Vincent J. Desiderio, Jr., MS		Marla E. Carroll, BS
<i>Poster Sessions:</i>	Alex J. Krotulski, PhD	<i>Engineering &amp; Applied Sciences:</i>	Kurt D. Weiss, MS
	Gary L. Bell, DDS	<i>Forensic Nursing Science:</i>	Janean M. Fossum, BSN, RN
<i>Workshops:</i>	Andrew C. Seidel, PhD		Kelly A. Berishaj, DNP
	Murrell Godfrey, PhD	<i>General:</i>	Erin M. Worrell, BSc
<i>Luncheon Seminars:</i>	Linton A. Mohammed, PhD		Erin P. Koester, MS
	Emily D. Gottfried, PhD	<i>Jurisprudence:</i>	Leigh M. Tomlin, JD
<i>Last Word Society:</i>	Kenneth E. Melson, JD		Terry-Dawn Hewitt, LLM
	Carla M. Noziglia, MS	<i>Odontology:</i>	Phyllis Ho, DDS
<i>Bring Your Own Slides:</i>	J.C.U. Downs, MD	<i>Pathology/Biology:</i>	Owen L. Middleton, MD
	Joseph A. Prahlow, MD	<i>Psychiatry &amp; Behavioral Science:</i>	Corina Freitas, MD
<i>Student Academy:</i>	Marilyn T. Miller, EdD	<i>Questioned Documents:</i>	Kesha T. White, BS
	Lynn A. Schneeweis, MS		Kevin P. Kulbacki, MSFS
<i>Interdisciplinary Symposium:</i>	Paul Messner, JD	<i>Toxicology:</i>	Diane Boland, PhD
	Jessica Volz, DNP		Dayong Lee, PhD
<i>Local Arrangements:</i>	Candice Bridge, PhD	<i>Young Forensic Scientists Forum:</i>	Zain Bhaloo, MSc
<i>Anthropology:</i>	Debra P. Zinni, PhD		
	Teresa V. Wilson, PhD		

# GENERAL INFORMATION

## Registration Desk Hours

Sunday	February 12	1:00 PM	-	5:00 PM
Monday	February 13	6:45 AM	-	5:00 PM
Tuesday	February 14	6:45 AM	-	6:00 PM
Wednesday	February 15	6:45 AM	-	5:00 PM
Thursday	February 16	6:45 AM	-	5:00 PM
Friday	February 17	6:45 AM	-	4:00 PM
Saturday	February 18	7:30 AM	-	11:00 AM

## Exhibit Hall Hours

Wednesday	February 15	11:30 AM	-	4:00 PM
Thursday	February 16	9:00 AM	-	2:00 PM
AAFS Reception	(Exhibits Open)	6:00 PM	-	8:00 PM
Friday	February 17	8:00 AM	-	2:00 PM

**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.

## Future AAFS Annual Conferences

### 2024 AAFS Annual Conference

February 19-24, 2024  
Denver Convention Center  
Denver, CO

### 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

# 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-Yrtu1c9klaUmTmrEtmsaxoCbiQQAvD\\_BwE](https://www.rainn.org/articles/sexual-harassment?gclid=CjwKCAjw2P-KBhByEiwADBYWCqz0g1E4mRJRxf5TN-EQ-JYXo2Q7USO-Yrtu1c9klaUmTmrEtmsaxoCbiQQAvD_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

Victim Service Center of Central Florida  
407-500-4325  
<http://www.victimservicecenter.org/>

Florida Council Against Sexual Violence  
888-956-7273  
<https://www.fcasv.org/>

Orlando Police Department  
321-235-5300  
<https://www.orlando.gov/Our-Government/Departments-Offices/Orlando-Police-Department>

National Sexual Assault Hotline: 1-800-656-4673

National Domestic Violence Hotline: 1-800-799-7233

RAINN  
<https://www.rainn.org/>  
Resources including 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.*



# AWARDS

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## Distinguished Fellow

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*Julie A. Howe, MBA*

## AAFS Honorary Member

---

*Anne H. Warren, BS*

## Humanitarian and Human Rights Resource Center's Clyde Snow Award

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*The Forensic Unit of the International Committee of the Red Cross (ICRC)*

## FSF Emerging Forensic Scientist Award

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*Helen M. Brandt-Litavec, MS  
Ya-Chih Cheng, MS  
Jasmine Maxwell, MSFS*

## FSF Warren-Young Scholarship

---

*Paula E. Slamowitz, PhD*

## FSF Jan S. Bashinski Criminalistics Graduate Thesis Assistance Grant

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*Tori L. Schaffer, BS*

*(to be presented during the  
Criminalistics Section Business Meeting)*

# DISTINGUISHED FELLOW

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Julie A. Howe, MBA, received her Bachelor of Science in Health Information Management from Saint Louis University in 1997. It was at this time that she was introduced to forensic science where she completed an internship at the medical examiner's office. Upon graduation, Julie started working at Saint Louis University Division of Forensic Pathology. The American Board of Medicolegal Death Investigators (ABMDI) was created at that time and as the Executive Director, Julie continued her education where she received her Masters in Business Administration in 2001. Julie also served as a Medicolegal Death Investigator for the Office of the Regional Medical Examiner from 2004-2019.



*Julie A. Howe, MBA*

Julie became an ABMDI Diplomate in 2008 and maintains her certification. She is currently an Associate Professor in the Department of Clinical Health Sciences at Doisy College of Health Sciences – Saint Louis University. Here, Julie transfers her skills and knowledge of medicolegal death investigation to public health and social justice where she teaches that death is an important health outcome to track and is a key indicator of public health.

Julie is a member of several professional organizations including the American Academy of Forensic Sciences (AAFS). She started her membership with the AAFS as a Trainee Affiliate in 1998, and was promoted to Fellow in 2006. Throughout her history with the AAFS, Julie has served on several committees including the Annual Program Committee, Long Term Planning Committee, Academy Standards Board, Policy and Procedure Committee, and Nominating Committee. She has been participating in the AAFS Annual Conferences since 1999, where she served as Chair of the Student Academy Program and has made multiple presentations. The first Forensic Science Educators Conference (FSEC) was held at Saint Louis University in 2002 and Julie was instrumental in the effort. Three additional FSECs were held at the university in 2004, 2006, and 2008. As a Fellow of the General Section, Julie served as the Section Chair from 2011-13 and served on the Board of Directors from 2013-17.

Julie has also donated much of her time serving on committees for the Forensic Sciences Foundation (FSF) and served as the FSF Chair in 2012.

Julie is the author of several peer-reviewed manuscripts as well as a contributor to six published books. She has been invited to present both nationally and internationally on topics related to medicolegal death investigation.

The AAFS Distinguished Fellow Award is given to someone who has given meritorious service to the AAFS, the forensic sciences, and to other professional peer group organizations. Julie's contribution to the forensic science field and the role she has served in promoting education is unsurmountable.

Our congratulations to Julie Howe, 2023 AAFS Distinguished Fellow!

# AAFS HONORARY MEMBER

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*Anne H. Warren, BS*

The American Academy of Forensic Sciences (AAFS) would like to recognize former AAFS Executive Director Anne Warren as its third Honorary Member.

Anne joined the Academy staff in 1985 as the Assistant Director. Her tremendous management skills were quickly recognized and in 1990 she assumed the Executive Director position. Under her leadership, the Academy gained its strong financial foundation and experienced a time of growth and expansion of its services to members and the public. The membership steadily grew from 2,600 to over 6,500 members and affiliates, including the addition of an 11th section—Digital & Multimedia Sciences. Anne retired as Executive Director May 31, 2020.

During Anne’s tenure, the AAFS Standards Board, Forensic Science Educational Programs Accreditation Commission, the Forensic Specialties Accreditation Board, the Humanitarian and Human Rights Resource Center, and the FSF Warren-Young Scholarship for middle and high school science teachers were all established.

The Academy grew steadily in its international stature with the establishment of international educational outreach programs across the globe. She oversaw 30 highly successful annual scientific meetings for the Academy. Former Academy officers relied heavily on Anne’s guidance and institutional memory in moving the Academy forward to its current success.

Please join us in celebrating Anne’s contributions and service to the Academy as she is awarded the status of AAFS Honorary Member.

# SECTION AWARDS

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The Section Awards will be presented during Section Business Meetings on Wednesday, February 15.

## Section Award Honorees

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### **Anthropology Section's**

Ellis R. Kerley Research Award  
Outstanding Mentorship Award  
Diversity and Inclusion Award  
J. Lawrence Angel Award

Yangseung Jeong, PhD  
Peer H. Moore-Jansen, PhD  
Ginelle Kocher  
Taylor Lambrigger, MA

### **Criminalistics Section's**

Paul L. Kirk Award  
Mary E. Cowan Outstanding Service Award  
Meritorious Service Award

Pierre A. Margot, PhD  
Michael D. Coble, PhD  
Marilyn T. Miller, EdD

### **Digital & Multimedia Sciences Section's**

Outstanding Case Study Award  
Outstanding Student Research Award

Joseph Levi White, PhD  
Austin Cauley, BS

### **Engineering & Applied Sciences Section's**

Steven Charles Batterman Award

Steven Charles Batterman, PhD  
Laura Liptai, PhD

### **Forensic Nursing Science Section's**

Forensic Nurse Scientist Award  
Forensic Nurse Innovator Award

Julie L. Valentine, PhD  
Patricia M. Speck, DNSc

### **General Section's**

Paul W. Kehres Meritorious Service Award  
John R. Hunt Award

Gina M. Londino-Smolar, MS  
Katherine M. Brown, PhD

### **Jurisprudence Section's**

Harold A. Feder Award

Paul Messner, JD  
Andrew Sulner, MSFS, JD

### **Odontology Section's**

Reidar F. Sognnaes Award  
Lester Luntz Odontology Award

Charles Michael Bowers, DDS  
Paula Brumit, DDS

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

Milton Helpern Award  
Best Resident Paper Award  
Award for Achievement in the Forensic Life Sciences

Joyce L. deJong, DO  
Charles Rohrer, MD  
Jeffrey D. Wells, PhD

### **Questioned Documents Section's**

Maureen Casey-Owens Award

Larry A. Olson, MFS

### **Toxicology Section's**

Irving Sunshine Award

Rebecca L. Hartman, PhD

# BUSINESS MEETINGS

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## Attend Your Section's Annual Business Meeting for a Chance to Win a Complimentary Meeting Registration!

Do not miss the opportunity to win a complimentary meeting registration for the 2024 AAFS Annual Scientific Conference in Denver, CO! Each section will award one registration to a voting member who attends their Section Business Meeting.

Wednesday, February 15		
1:00 PM	-	3:45 PM Criminalistics
1:30 PM	-	3:45 PM Forensic Nursing Science
1:30 PM	-	3:45 PM Pathology/Biology
2:00 PM	-	3:45 PM Anthropology
2:00 PM	-	3:45 PM Digital & Multimedia Sciences
2:00 PM	-	3:45 PM Engineering & Applied Sciences
2:00 PM	-	3:45 PM General
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

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

The Annual Business Meeting of the Fellows and Members of the AAFS will be held on Wednesday, February 15, 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 2023-24 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, Members, and Retired Members present will automatically be entered in a drawing for a complimentary meeting registration to attend the 2024 AAFS Annual Scientific Conference in Denver, CO.

# FINANCIAL CONTRIBUTORS

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The American Academy of Forensic Sciences would like to thank the following for their contribution to the 75<sup>th</sup> Anniversary Scientific Conference:

## GOLD SPONSOR

# ThermoFisher

## SCIENTIFIC

## SILVER SPONSORS



## BRONZE SPONSORS



## GENERAL SPONSORS



# 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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JOINTLY ACCREDITED PROVIDER™  
INTERPROFESSIONAL CONTINUING EDUCATION

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 45.75 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 45.75 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.

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# DIVERSITY AND INCLUSION IN FORENSIC SCIENCE FORUM AND RECEPTION

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*Open to All Meeting Registrants*

Tuesday, February 14, 2023

8:00 PM - 10:00 PM

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## *We Say Gay: The Intersectionality of Science*



**Rook E. Ringer**

**Attorney at Law  
The Law Office of Rook Ringer  
St. Augustine, FL**

### ***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.

Prior to attending law school, Rook worked as a military intelligence analyst in the US Army, and later for many years as a private investigator. Rook attended Florida Coastal School of Law under a full scholarship, and has a bachelor's degree, cum laude, in Forensic Science. She worked throughout law school, writing motions and appellate briefs for various law firms, as well as assisting in dozens of criminal trials. She is a gifted writer who has written many appellate briefs for multiple district courts of appeal, as well as for the Florida Supreme Court.

Rook is a board member of the National Trans Bar Association, as well as being a member of The National LGBT Bar Association, National Bar Association, The National Trial Lawyers Association, the American Association of Jewish Lawyers and Jurists, the Florida Association of Women Lawyers, and the National Police Accountability Project. Rook is the recipient of the 2021 National Trial Lawyers Top 10 Civil Rights Trial Lawyers, Top 10 Women's Rights Trial Lawyers and Top 25 National Women Trial Lawyers. She was also the American Bar Association's General Practice and Solo Practitioner Division Diversity Fellow for 2022. Rook is currently serving on the Diversity Board and Programs Board.

# STUDENT ACADEMY

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Tuesday, February 14, 2023

9:00 AM - 1:00 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:*

**Marilyn T. Miller, EdD**  
Virginia Commonwealth University  
Richmond, VA

*Co-Chair:*

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

*Faculty:*

*Anthropology*  
**Ginesse A. Listi, PhD**  
Louisiana State University  
Baton Rouge, LA

*Odontology:*

**Lillian A. Nawrocki, DDS**  
Office of the Medical Examiner  
Suffolk County, NY

*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, BS, MS**  
BEK TEK LLC  
Stafford, VA

*Psychiatry & Behavioral Science:*

**Emily D. Gottfried, PhD**  
Medical University of SC  
Charleston, SC

*Engineering & Applied Sciences:*

**Roy Crawford, BSME**  
R.R. Crawford Engineering  
Whitesburg, KY

*Questioned Documents:*

**Kelsey Osborn, BS**  
Osborn & Son  
Middlesex, NJ

*General:*

**Brian S. Clark, MFS**  
Federal Bureau of Investigation  
Chicago, IL

*Toxicology:*

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

**T.L. Williams, MFS**

U.S. Army Criminal Investigation Command  
Quantico, VA

**Ashraf Mozayani, PhD**

Texas Southern University  
Houston, TX

*Jurisprudence:*

**Pamela A.W. King, JD**  
Minnesota State Public Defender Office  
Rochester, MN

# STUDENT ACADEMY

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## Program:

9:00 AM - 9:10 AM	<b>Introduction</b> <i>Marilyn T. Miller, EdD</i>
9:10 AM - 9:20 AM	<b>Welcome</b> <i>Laura C. Fulginiti, PhD</i>
9:20 AM - 9:30 AM	<b>"The Case"</b> <i>Lynn A. Schneeweis, MS</i>

## The Forensic Sciences Group I Disciplines

9:30 AM - 9:45 AM	<b>Pathology/Biology</b> <i>J.C.U. Downs, MD</i>
9:45 AM - 10:00 AM	<b>Anthropology</b> <i>Ginesse A. Listi, PhD</i>
10:00 AM - 10:15 AM	<b>Odontology</b> <i>Lilliian A. Nawrocki, DDS</i>
10:15 AM - 10:30 AM	<b>Toxicology</b> <i>George Jackson, PhD; Ashraf Mozayani, PhD</i>
10:30 AM - 10:45 AM	<b>Digital &amp; Multimedia Sciences</b> <i>Douglas Lacey, BS, MS</i>
10:45 AM - 11:00 AM	<b>Q&amp;A, Assignment, and Break</b>

## The Forensic Sciences Group II Disciplines

11:00 AM - 11:15 AM	<b>General</b> <i>Brian S. Clark, MFS; T.L. Williams, MFS</i>
11:15 AM - 11:30 AM	<b>Criminalistics</b> <i>Kelly Knight, MS</i>
11:30 AM - 11:45 AM	<b>Questioned Documents</b> <i>Kelsey Osborn, BS</i>
11:45 AM - 12:00 PM	<b>Engineering &amp; Applied Sciences</b> <i>Roy Crawford, BSME</i>
12:00 PM - 12:15 PM	<b>Psychiatry &amp; Behavioral Science</b> <i>Emily D. Gottfried, PhD</i>
12:15 PM - 1:30 PM	<b>Lunch &amp; Student Trivia</b>
1:30 PM - 1:45 PM	<b>Case Conclusion</b> <i>Pamela A.W. King, JD</i>
1:45 PM - 2:00 PM	<b>Wrap-Up</b>

# FEPAC SESSION

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## Accreditation of Forensic Science Academic Programs Through the AAFS Forensic Science Education Programs Commission (FEPAC)

Tuesday, February 14, 2023

*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, MS**

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: [www.aafs.org/FEPAC](http://www.aafs.org/FEPAC).

### **Program:**

8:30 AM - 9:00 AM	<b>Introduction and Welcoming Remarks/Module 1: What to Know About FEPAC</b> <i>Heidi Eldridge, PhD</i>
9:00 AM - 9:30 AM	<b>Module 2: An Overview of the FEPAC Application Process</b> <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> <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> <i>Josh Brunty, MS</i>
10:45 AM - 11:15 AM	<b>Module 5: A Review of Self-Study Standards 5.0—Graduate Programs</b> <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> <i>Heidi Eldridge, PhD</i>
11:45 AM - 12:15 PM	<b>Module 7: FEPAC On-Site Evaluator Training</b> <i>Jason L. Schroeder, MS</i>
12:15 PM - 12:45 PM	<b>Questions and Answers</b> <i>FEPAC Commissioners and Accreditation Coordinator</i>

# YOUNG FORENSIC SCIENTISTS FORUM

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

## **S1 Education, Training, and Experiences: The Ingredients to Make Science Work!**

**Tuesday, February 14, 2023**

**8:00 AM – 5:00 PM**

**CE Hours: 6.75**

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*Chair:*

**Zain Bhaloo, MSc**

Canada Border Services Agency  
Ottawa, ON CANADA

*Committee Member:*

**Emily Rue, PhD**

Iowa Department of Public Safety  
Ankeny, IA

**Laura C. Fulginiti, PhD**

AAFS President  
Phoenix, AZ

**Brooke W. Kamrath, PhD**

University of New Haven  
West Haven, CT

**Donald E. Shelton, PhD**

University of Michigan-Dearborn  
Saline, MI

**Brandon L. Garrett, JD**

Wilson Center for Science and Justice  
Durham, NC

**Barry K. Logan, PhD**

CFSRE  
Willow Grove, PA

**Dirk M. Vastrick, BA**

Dirk Vastrick Presents  
Spokane Valley, WA

**Denise Gemmellaro, PhD**

Kean University  
Union, NJ

**Elaine M. Pagliaro, JD**

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

**C. Ken Williams, MSc, JD**

New Jersey State Police  
Hamilton, NJ

**Cheryl Hunter**

AAFS Membership Coordinator  
Colorado Springs, CO

**Carrie Polston, PhD**

Universite de Lausanne  
Lausanne, Vaus, SWITZERLAND

**Erin Worrell, BSc**

Denver Office of the Medical Examiner  
Denver, CO

**Gregory E. Laskowski, MPA**

Criminalistics Services International  
Bakersfield, CA

**Dayla Rich, PhD**

Federal Bureau of Investigation  
Huntsville, AL

**Charlotte Word, PhD**

Forensic Science Expert  
Richmond, VA

**Henry C. Lee, PhD**

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

**Corey W. Scott, MSFS**

Federal Bureau of Investigation  
Redstone Arsenal, AL

**Paul Yount, MSFS**

Phoenix Police Department  
Crime Laboratory  
Phoenix, AZ

**Learning Overview:** The Young Forensic Scientist Forum (YFSF) provides students and young professionals with less than five years of experience an opportunity to network, collaborate and learn from fellow peers and experts in the field. This session will prepare attendees for a successful career in their discipline of choice and allow them to look from the outside-in as they evaluate themselves and their future impact on forensic science. Our mission is to provide education, mentorship, and resources to students and burgeoning forensic scientists to promote interest and longevity in the field and encourage participation and advancement in the AAFS.

**Impact Statement:** After attending this session, attendees will better understand how forensic science has evolved over the years and how every forensic science discipline impacts and enhances the field regardless of one's experience and background. In addition, attendees will learn the importance of education, extensive training, and innovative scientific research. Finally, attendees will learn about the "science" behind job interviewing and become adept in resume building in the forensic sciences.

**Program Description:**

This year the American Academy of Forensic Sciences (AAFS) is celebrating 75 years of global engagement. The overall theme of the conference is Science Works. In the past few years, science and the scientific method have been under attack, denigrated, and dismissed. AAFS President Laura Fulginiti's plan is to offer scientific content demonstrating that forensic science provides trustworthy, objective data that can be relied upon by the judicial system, Congress, and the public. Our Special Session theme, *Education*,

# YOUNG FORENSIC SCIENTISTS FORUM

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## S1 Education, Training, and Experiences: The Ingredients to Make Science Work!

### Program Description cont.:

*Training, and Experiences: The Ingredients to Make Science Work!*, was chosen to invigorate young forensic scientists and demonstrate how education and training play a vital role in making forensic science work. This full-day session will show young forensic scientists that their contribution matters and that the decisions they make today can have a positive impact on the scientific community at large.

This year the YFSF is excited to present an outstanding group of speakers. These distinguished presenters have been carefully selected to provide exceptional mentorship to attendees through topics such as how to stay true to science, present results in a scientifically correct and neutral manner, manage high-profile cases, and interact with prosecutors and defense attorneys. The session will also include thoughtful demonstrations on assessing one's professional goals, establishing what success looks like for a young forensic scientist, and thinking about one's responsibilities as a mentor and leader as they advance into a career.

The YFSF Special Session provides an inclusive atmosphere for young forensic scientists to have the opportunity for professional growth/development and scientific engagement with esteemed colleagues. Through these presentations, attendees will hear from experienced practitioners as they discuss their extensive education, training, and experiences that have led to success in their field of study. These presentations include case-driven research, innovative methodology, scientific studies, and personal stories. Additionally, each presenter will include thoughtful discussions on their struggles and setbacks that have ultimately made "science work." Through this session, the YFSF aims to integrate young professionals into the field as they begin their journey into forensic science. The YFSF offers two additional opportunities for young professionals and students: the Bring Your Own Posters (BYOP) Session and the Bring Your Own Slides (BYOS) Session. We are excited to announce that this year we have collaborated with The Center for Forensic Science Research and Education (CFSRE) to honor and award two outstanding scientists for their contributions to forensic science. Finally, the session will end with a resume review workshop, so do not forget to update your resume and bring several printed copies with you to the session!

### Program:

8:00 AM - 8:20 AM	<b>Introduction to the YFSF</b> <i>Zain Bhaloo, MSc</i>
8:20 AM - 8:40 AM	<b>Membership in AAFS</b> <i>Cheryl Hunter</i>
8:40 AM - 9:00 AM	<b>Stand Up for Science</b> <i>Laura Fulginiti, PhD</i>
9:00 AM - 9:20 AM	<b>When You Wish Upon a Star</b> <i>C. Ken Williams, MSc, JD</i>
9:20 AM - 9:40 AM	<b>Lessons Learned During the Evolution of Forensic DNA Testing</b> <i>Charlotte Word, PhD</i>
9:40 AM - 10:00 AM	<b>Forensic Science and Legal Education</b> <i>Brandon L. Garrett, JD</i>
10:00 AM - 10:15 AM	<b>Break</b>
10:15 AM - 10:35 AM	<b>Professional Growth: Stages in the Arc of Your Career in Forensic Science</b> <i>Barry K. Logan, PhD</i>
10:35 AM - 10:55 AM	<b>Four-Plus Decades in Forensic Science: Adapting to a Changing Environment</b> <i>Gregory E. Laskowski, MPA</i>
10:55 AM - 11:15 AM	<b>From Farmboy to Forensic Scientist</b> <i>Paul Yount, MSFS</i>
11:15 AM - 11:35 AM	<b>Forensic Science Experts—What the Judge and Jury Expect</b> <i>Donald E. Shelton, PhD</i>

# YOUNG FORENSIC SCIENTISTS FORUM

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## S1 Education, Training, and Experiences: The Ingredients to Make Science Work!

### Program cont.:

11:35 AM - 11:55 AM	<b>Recovering Scientific Credibility in the Courtroom: The Effects of Less-Than-Expert Testimony and How to Mitigate Effects in a Particular Case or Future Testimony</b> <i>Elaine M. Pagliaro, JD</i>
11:55 AM - 1:00 PM	<b>BREAK</b>
1:00 PM - 1:40 PM	<b>“The Past, Present, and Future” of Forensic Science and Forensic Education</b> <i>Henry C. Lee, PhD</i>
1:40 PM - 2:00 PM	<b>Complications of Additive Manufacturing in Forensic Science</b> <i>Corey W. Scott, MSFS</i>
2:00 PM - 2:20 PM	<b>Traces for Reconstruction and Investigation Leads</b> <i>Brooke W. Kammrath, PhD</i>
2:20 PM - 2:40 PM	<b>Using Forensic Entomology to Promote Multidisciplinary Involvement and Collaboration in the Forensic Sciences</b> <i>Denise Gemmellaro, PhD</i>
2:40 PM - 2:55 PM	<b>BREAK</b>
2:55 PM - 3:15 PM	<b>Redefining Failure: The “Ingredient” in Scientific Success That You Never See</b> <i>Carrie Polston, PhD</i>
3:15 PM - 3:35 PM	<b>So You Want to be a Medicolegal Death Investigator</b> <i>Erin Worrell, BSc</i>
3:35 PM - 3:55 PM	<b>Starting Off With a Bang!: My Experience in Becoming an Explosives Chemist</b> <i>Dayla Rich, PhD</i>
3:55 PM - 4:15 PM	<b>The Science of Going to Work Faster and Better: Improve Your Results Tomorrow</b> <i>Dirk M. Vastrick, BA</i>
4:15 PM - 4:55 PM	<b>Resume Review Workshop</b> <i>Dirk M. Vastrick, BA</i>
4:55 PM - 5:00 PM	<b>Closing of the YFSF Special Session</b> <i>Emily Rue, PhD</i>

# HHRRC SYMPOSIUM

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

## S2 HHRRC Symposium: The Contemporary Global Scope of Forensic Human Rights Investigations and a New AAFS Initiative

Tuesday, February 14, 2023

8:00 AM – 12:00 PM

CE Hours: 3.25

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*Chair:*

**Dawnie W. Steadman, PhD**

University of Tennessee  
Knoxville, TX

*Co-Chair:*

**Luis Fondebrider, PhD**

Independent Forensic Consultant  
Buenos Aires, ARGENTINA

**Learning Overview:** After attending this presentation, attendees will have a greater understanding of the role of and need for forensic science in human rights investigations as well as learn of new initiatives to involve AAFS members in such projects.

**Impact Statement:** This presentation will impact the forensic science community by: (1) highlighting some of the current forensic science human rights investigate efforts, and (2) providing direct access to some of the organizations and individuals currently involved in human rights investigations globally.

**Program Description:** The purpose of this half-day international symposium is to provide an overview of contemporary forensic science applications to human rights investigations by some of the individuals and organizations responsible for the forensic responses, including the Equipo Argentino de Antropología Forense, International Criminal Court, and the International Committee for the Red Cross. There will also be a discussion of the challenges of forensic work in these international contexts, beyond the scientific challenges. Current international protocols and standards in forensic human rights investigations will also be presented. In addition, the HH RC will introduce a new initiative to create a database of AAFS members who wish to be involved in humanitarian and human rights investigations that will serve as a subject matter expert resource for international organizations seeking forensic experts. The second of the symposium will consist of a panel of the presenters who will answer questions from the attendees.

*Chair:*

**Dawnie W. Steadman, PhD**

University of Tennessee  
Knoxville, TX

*Co-Chair:*

**Luis Fondebrider, PhD**

Independent Forensic Consultant  
Buenos Aires, ARGENTINA

**Speakers:**

**Jose Pablo Baraybar, PhD**

Forensic Unit, International Committee of the Red Cross

**Joanna Naples-Mitchell, JD**

Physicians for Human Rights

**Joye M. Carter, MD**

Former Chief Forensic Pathologist of San Luis Obispo, CA

**Jane Amelia Taylor, BDS, MD**

Forensic Unit, International Committee of the Red Cross

**Stephen Cordner, MA, MBBS**

Consultant Forensic Specialist, Victorian Institute of Forensic Medicine

**Morris Tidball-Binz, MD**

UN Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions

**Mercedes Doretti, Lic.**

Equipo Argentino de Antropología Forense

**Julie Valentine, PhD, RN**

Brigham Young University College of Nursing

**Jamie Ferrell, MBA, RN**

Memorial Hermann - Texas Medical Center

**Duarte Vieira, MD, PhD**

Chairman of the Coimbra University Centre for Humanitarian and Human Rights Research and Training

**Pierre Guyomarc'h, PhD**

Forensic Unit, International Committee of the Red Cross

Chairman of the Scientific Advisory Board of the Prosecutor of the International Criminal Court

**Virginia Lynch, MSN, RN**

Forensic Nurse Consultants, International

**Maria Dolores Morcillo Mendez, MD**

Forensic Unit, International Committee of the Red Cross

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# HHRRC SYMPOSIUM

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## S2 HHRRC Symposium: The Contemporary Global Scope of Forensic Human Rights Investigations and a New AAFS Initiative

### Program:

- 8:00 AM – 8:15 AM **Forensic Human Rights Investigations: A Brief History and New Initiatives at AAFS**  
*Dawnie Steadman, PhD; Luis Fondebrider, PhD*
- 8:15 AM – 8:30 AM **Forensic Nursing Science: A Contemporary Resource to Humanitarian and Human Rights**  
*Virginia Lynch, MSN, RN; Jamie Ferrell, MBA, RN; Julie Valentine, PhD, RN*
- 8:30 AM – 8:45 AM **Eighteen years of Forensic Humanitarian Action at the International Committee of the Red Cross**  
*Pierre Guyomarc'h, PhD; Maria Dolores Morcillo Mendez, MD; Jane Amelia Taylor, BDS, MD*
- 8:45 AM – 9:00 AM **Break and Questions**
- 9:00 AM – 9:15 AM **Forensic Science Investigation and Prevention of Unlawful Killings**  
*Morris Tidball-Binz, MD*
- 9:15 AM – 9:30 AM **“Excited Delirium” and Deaths in Police Custody: The Deadly Impact of a Baseless Diagnosis**  
*Joanna Naples-Mitchell, JD; Joye Carter, MD*
- 9:30 AM – 9:45 AM **International Committee of the Red Cross Missing/Deceased Migrants en Route to Western Europe: A Forensic Perspective**  
*Jose Pablo Baraybar, PhD*
- 9:45 AM – 10:00 AM **Break and Questions**
- 10:00 AM – 10:15 AM **The Search for the Disappeared in Mexico**  
*Mercedes Doretti, Lic.*
- 10:15 AM – 10:30 AM **The 2022 Istanbul Protocol and the Investigation and Documentation of Torture and Ill-treatment**  
*Duarte Vieira, MD, PhD*
- 10:30 AM – 10:45 AM **Humanitarian and Human Rights Forensics: An update from Asia and the Pacific**  
*Stephen Cordner, MA, MBBS*
- 10:45 AM – 11:00 AM **Break**
- 11:00 AM – 12:00PM **Panel Discussion and Q&A**

# HHRRC POSTER SESSION

*Open to All Meeting Registrants*

The Humanitarian and Human Rights Resource Center (HHRRC) of the American Academy of Forensic Sciences (AAFS), with support from the National Institute of Justice's Forensic Technology Center of Excellence, 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).

## Tuesday

February 14, 2023

6:00 PM – 8:00 PM

### *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

- 1 Fingerprint Scan of the Dead: Real-Time Identification During Search and Recovery Phase in Large Scale Disaster**  
Lay See Khoo; Poh Soon Lai; Muhammad Syafiq Zamasry; Ahmad Hafizam Hasmi; Mohamad Azaini Ibrahim; Mohd Shah Mahmood
- 2 Scene Documentation for Human Rights Investigators: How Better Documentation Helps Experts Answer Your Questions**  
Tal Simmons
- 3 Navigating Stakeholder Relationships in Humanitarian Forensic Work: Lessons Learned From Georgia**  
Kelly Kamnikar; Meri Gonashvili; Micayla Spiros; Nicholas Herrmann; Tea Takniashvili; Nino Tavartkiladze; Petra Banks; Keegan Beane; Krysten Cruz; Rhian Dunn; Amber Plemons; Ivanna Robledo; Buba Chachkiani
- 4 African Society for Forensic Medicine**  
Uwom Eze; Robert Ngude; Johansen Oduor; Gilbert Ngongang
- 5 Disaster Victim Identification and Migration—The Value of Using Scarification and Tribal Markings as Secondary Identifiers in Mass Fatality Incidents**  
Tumisang Thabo Mbedzi; Stephen Fonseca; Sally Reynolds
- 6 Recovery and Analysis of Human Remains Derived From the 1921 Tulsa Race Massacre: Current Findings**  
Phoebe R. Stubblefield
- 7 Capacity Building for Rwandan Medical Officers in the Field of Forensic Pathology Basic Skills**  
Herbert Mushumba; Joseph Kalisa
- 8 Construction of a National Hydrogen and Oxygen Isoscape for Colombia as a Baseline for the Identification of Region of Origin of Unidentified Victims of the Internal Armed Conflict**  
Daniela Orozco Ramelli; Tiffany B. Saul; Ana Carolina Guatame García; Jonathan Drake; Erica Andrea Castaño Osorio
- 9 Accuracies of Artec® Spider®, EinScan® Pro 2X, NextEngine®, and Qlone® (for iPhone®) Photogrammetry for 3D Bone Data Analysis in Forensic Anthropology**  
Tom D. Beresford; Carl N. Stephan; Tina Manne; Kelvin Henderson; Chris Glen
- 10 Humanitarian Forensic Action at the International Committee of the Red Cross From 2003 to 2023**  
Pierre Guvomarc'h; D. Abboud; O. Finegan; S. Fonseca; D.J. Jimenez; C. Kainazarova; U. Krenzer; M.M. Morcillo Mendez; A. Page; B. Sablough; J. Taylor; M. Vennemeyer
- 11. Understanding the Effects of Rehydration on the Rate of Decomposition**  
Claire Du Toit; Desiré Brits; Jolandie Myburgh
- 12. Insect Succession Patterns During Decomposition in Southern Nigeria**  
Izuchukwu S. Etoniru; Desiré Brits; Maryna Steyn; Jolandie Myburgh

# NIST-AAFS SPECIAL SESSION

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

## S3 Implementation of Standards: OSAC Registry Checklists

Tuesday, February 14, 2023

8:00 AM – 12:00 PM

CE Hours: 3.5

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*Chair:*

**Sarah Kerrigan, PhD**  
Sam Houston State University  
Huntsville, TX

*Co-Chair:*

**Laurel Farrell, BA**  
ANSI National Accreditation Board  
Firestone, CO

*Faculty:*

**Jason Bundy**  
Florida Department of Law Enforcement  
Tallahassee, FL

**Pamela Sale, BS**  
ANSI National Accreditation Board  
Washington, DC

**Allison Getz, BS**  
NIST  
Gaithersburg, MD

**Erika Ziemak, MSFS**  
Houston Forensic Science Center  
Houston, TX

**Lori Nix, BS**  
Georgia Bureau of Investigation  
Decatur, GA

**Learning Overview:** After attending this presentation, attendees will have gained insight regarding tools, training, and resources to support the implementation of standards on the Organization of Scientific Area Committees (OSAC) Registry. Specifically, attendees will understand how to access and use checklists to document objective evidence of conformance and how to use these checklists within their own organizations for gap analysis or for internal auditing purposes.

**Impact Statement:** Forensic science service providers will benefit from additional resources that are available to facilitate OSAC Registry implementation efforts (i.e., checklists) as part of the National Institute of Standards and Technology-American Academy of Forensic Sciences (NIST-AAFS) Collaborative Agreement.

**Program Description:** In this interdisciplinary symposium, checklists to document objective evidence of conformance, progress toward implementation, and auditing use will be explained. Insights regarding checklist development, beta-testing, delivery, and versioning will be presented. Collaborations with quality management personnel will be explored, and the practical use of checklists within a forensic service provider will be discussed.

During this interdisciplinary symposium, the benefits of checklist use will be presented. Free access to this resource will be provided, and the practical use of these flexible tools will be explained from the perspective of the developers, providers, and other stakeholders. This special session will include instructions regarding the use of checklists for standards on the OSAC Registry, integration in the quality management system, and practical advice regarding their use. This session will also include an interactive session and panel discussion to provide feedback, ask questions, and gain insight from FSPs that are using the checklists.

# NIST-AAFS SPECIAL SESSION

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## S3 Implementation of Standards: OSAC Registry Checklists

### Program:

- 8:00 AM – 8:15 AM     **Introduction**  
*Sarah Kerrigan, PhD*
- 8:15 AM – 8:35 AM     **The Role of NIST in Consensus-Based Standards**  
*Allison Getz, BS*
- 8:35 AM – 8:50 AM     **Overview of the NIST-AAFS Checklist Initiative**  
*Laurel Farrell, BA*
- 8:50 AM – 9:50 AM     Demonstration and Use of the Checklist  
*Erika Ziemak, MSFS*
- 9:50 AM – 10:00 AM   **Interactive Quiz**  
*Sarah Kerrigan, PhD*
- 10:00 AM – 10:20 AM   **BREAK**
- 10:20 AM – 10:35 AM   **Role of AFQAM and QM Perspective**  
*Lori Nix, BS*
- 10:35 AM – 11:15 AM   **Practical Implementation of Checklists in an Operational Setting**  
*Erika Ziemak, MSFS; Jason Bundy; Pamela Sale, BS*
- 11:15 AM – 12:00 PM   **Panel Discussion**  
*Sarah Kerrigan, PhD; Allison Getz, BS; Laurel Farrell, BA; Erika Ziemak, MSFS; Loris Nix, BS; Jason Bundy; Pamela Sale, BS*

# INTERDISCIPLINARY SYMPOSIUM

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*Pre-Registration Required by Jan. 30*

## S4 The Formation of the American Academy of Forensic Sciences

Tuesday, February 14, 2023

1:15 PM – 5:15 PM

CE Hours: 3.5

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*Chair:*

**Katie Wells, MPH, BSN, RN**

Adventist HealthCare Shady Grove Medical Center Brunswick, MD

*Faculty:*

**G. David Annas, MD**

Forensic Psychiatry Consulting, LLC Syracuse, NY

**Barry A.J. Fisher, MS, MBA**

Indio, CA

**Corina Freitas, MD**

Freitas and Associates Alexandria, VA

**George W. Hime, MS**

Miami-Dade Medical Examiner Department Miami, FL

*Co-Chair:*

**Jessica Volz, DNP**

Adventist HealthCare Shady Grove Medical Center Brunswick, MD

**Carl R. McClary, MS**

Bureau of Alcohol, Tobacco, and Firearms Atlanta, GA

**Kenneth E. Melson, JD**

The George Washington University Law School Washington, DC

**Christopher Milroy, MD**

Eastern Ontario Regional Forensic Pathology Unit Ottawa, ON CANADA

**Learning Overview:** The Symposium will provide a historic context for the formation of the American Academy of Forensic Sciences, describe the impetus for its formation, and examine the effects of its members on forensic science.

**Impact Statement:** Attendees will learn about the state of forensic science before, during, and shortly after the formation of the American Academy of Forensic Sciences through the perspective of the six founding Sections: Criminalistics, Jurisprudence, Pathology/Biology, Psychiatry & Behavioral Science, Questioned Documents, and Immunology/Toxicology

**Program Description:** The 2023 Interdisciplinary Symposium will examine the post-WW II state of the forensic sciences leading to the American Academy of Forensic Sciences' formation in 1948 and that defined its early years. In 1948, there were six founding AAFS Sections: Criminalistics; Jurisprudence; Pathology/Biology; Psychiatry & Behavioral Science; Questioned Documents; and Immunology/Toxicology. Speakers from each of these Sections will discuss their Section's forensic concepts, research, and applications before, during, and shortly after the Academy's founding (roughly 1945 through 1965). How the Academy's formation and its members helped advance the forensic sciences during those early years will also be addressed.

We will examine how during this era life, law, and forensic science looked so much different than today. This retrospective view of the Academy's founding will help us understand the AAFS' continued efforts today to improve the trustworthiness of forensic science through objective data that can be relied upon by the judicial system, Congress, and the public.

# INTERDISCIPLINARY SYMPOSIUM

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## S4 The Formation of the American Academy of Forensic Sciences

### Program:

1:15 PM – 1:30 PM	<b>Welcome and Introduction of Faculty</b> <i>Katie, Wells, MPH, BSN, RN</i>
1:30 PM – 2:00 PM	<b>Jurisprudence</b> <i>Kenneth E. Melson, JD</i>
2:00 PM – 2:30 PM	<b>Criminalistics</b> <i>Barry A.J. Fisher, MS, MBA</i>
2:30 PM – 3:00 PM	<b>Pathology/Biology</b> <i>Christopher Milroy, MD</i>
3:00 PM – 3:15 PM	<b>BREAK</b>
3:15 PM – 3:45 PM	<b>Psychiatry &amp; Behavioral Science</b> <i>Corina Freitas, MD; G. David Annas, MD</i>
3:45 PM – 4:15 PM	<b>Questioned Documents</b> <i>Carl R. McClary, MS</i>
4:15 PM – 4:45 PM	<b>Toxicology (formerly known as Immunology)</b> <i>George W. Hime, MS</i>
4:45 PM – 5:15 PM	<b>Panel Discussion/Questions and Answers</b> <i>Jessica Volz, DNP</i>

# KEYNOTE ADDRESS

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*Open to All Meeting Registrants*

Wednesday, February 15, 2023

8:30 AM – 9:30 AM

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**K. Scott Griffith**

**Dallas, TX**

K. Scott Griffith is the founder and managing partner of SG Collaborative Solutions, LLC. He is the author of the world's first Collaborative High Reliability® and Collaborative Just Culture® improvement programs, independently audited and certified by DNV, a world-leading international accreditation organization.

Scott gained his reputation for world-class reliability and collaborative skills through success in high-consequence industries across the globe. He came to prominence as a leader in the field of aviation as an international airline captain and chief safety officer at American Airlines, and is widely recognized as the father of the airline industry's landmark Aviation Safety Action Programs (ASAP). He is the recipient of the Flight Safety Foundation's Admiral Luis de Florez Award for his outstanding contribution to aviation safety. He is the three-time recipient of the Federal Aviation Administration's Good Friend Award. Throughout his career, Scott has worked closely with government regulators in several high-consequence industries worldwide.

In 2000, the U.S. Surgeon General, David Satcher, extended a personal invitation to him to advise a Department of Health and Human Services committee on Blood Safety and Availability. From there, he applied his unique approach to focus on improving outcomes across multiple values in healthcare organizations, collaborating with hundreds of hospitals across the country. He is the recipient of the California Patient Safety Action Coalition Leadership Award.

In 2006, he retired from American Airlines and dedicated himself to just culture performance improvement integrations at several large healthcare systems, airlines, railroads, energy companies, emergency medical services, and fire and law enforcement agencies, leading many state- and nation-wide sectors. An acclaimed speaker, author, and socio-technical physicist, his experience brings insight into how the collaborative model supports a wide range of values and objectives, from patient safety and clinical outcomes to privacy, compassion, fiscal responsibility, customer satisfaction, and operational excellence.

He is the principal architect of the Sequence of Reliability® model of socio-technical improvement, bringing the science of reliability to diverse industries and organizations. He has pioneered the development of multiple predictive risk management strategies, including socio-technical probabilistic risk assessment (STPRA) and Reliability Management Systems (RMS). He has worked extensively with management, labor, and government officials and is widely recognized for his ability to help organizations achieve consensus results in support of common goals.

Scott holds a Master of Science degree in Physics from Texas A&M University and a Bachelor of Arts degree in English and Physics from Texas Christian University. His master's thesis contributed to the research and commercial development of the airborne windshear LIDAR project under grant from the Federal Aviation Administration (FAA) and the National Aeronautics and Space Administration (NASA).

His upcoming book, *The Hidden Science – Risk, Resiliency, and Reliability*, is scheduled for release November 7, 2023 by HarperCollins Leadership.

# PLENARY SESSION

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*Open to All Meeting Registrants*

Wednesday, February 15, 2023

10:00 AM – 11:30 AM

CE Hours: 1.5

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*Welcoming Remarks*

## ***The Role of Forensic Medicine in Forensic Science***

**Laura C. Fulginiti, PhD**

**President**

**American Academy of Forensic Sciences**

**Phoenix, AZ**

*Plenary Session Chair:*

**James R. Gill, MD**

Office of the Chief Medical Examiner  
Farmington, CT

*Plenary Session Co-Chair:*

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

U.S. Postal Inspection Service  
Lovettsville, VA

### ***Speakers***

**Christian Crowder, PhD**

Tarrant County Medical Examiner  
Fort Worth, TX

**Joyce L. deJong, DO**

WMU Homer Stryker School of Medicine  
Kalamazoo, MI

**Pamela A.W. King, JD**

Rochester, MN

**Overview:** Medicine is the science or practice of the diagnosis, treatment, and prevention of disease. Although considered part of the forensic sciences, forensic pathology and forensic anthropology are medical specialties. They use history, anatomic findings, and laboratory results to make diagnoses that are used by the public health and criminal justice systems. Unlike other forensic science disciplines that rely primarily on analytical tests (e.g., toxicology, DNA, fingerprint comparison) to obtain objective results, forensic anthropologists and forensic pathologists interpret both subjective and objective information to formulate their medical opinions.

Forensic pathologists and anthropologists give unpopular opinions and can come under a great deal of criticism and pressure. The National Association of Medical Examiners (NAME) published a position paper on medical examiner independence. Their survey showed that 82% of the forensic pathologists had experienced pressure regarding their medical opinions.

They noted: “No one should be made afraid to testify to the truth of their scientific convictions, when based on their direct examination of the evidence or their knowledge of the peer-reviewed literature. It is never appropriate for an authority, whether a litigating attorney, law enforcement officer, or an elected official, to threaten a forensic pathologist with loss of a job, position, or compensation based on testimony that is perceived to be counter to the authority’s wishes or to have resulted in the loss of a case.”

This pressure risks undermining the opinions of these professionals. The criminal justice system in the United States is indeed an adversarial system. This process, however, only should occur in the courtroom. Threats and retaliations against forensic science providers risk compromising our system of justice. The day when medical professionals are unwilling to participate in this adversarial process, whether called by the prosecution or the defense, or the plaintiff or defendant, is the day that we no longer have the best system of justice in the world.



# PLENARY SESSION

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*Open to All Meeting Registrants*

## ***Forensic Pathology and Forensic Anthropology: An Update on Their Roles in the Criminal Justice System***

### **Overview cont.**

Questions that will be addressed include: How do these specialties fit into the Academy? How do they differ from the basic sciences? What challenges are they facing? In order to highlight the many challenges, high-profile trials, work-force shortages, social media and activism, roles in investigations, and bias will be explored.

To address these issues, there will be presentations by Dr. Joyce deJong, a forensic pathologist, and Dr. Christian Crowder, a forensic anthropologist. In addition, we will have a legal perspective from a sitting judge, the Honorable Pamela King.

### **Program:**

10:00 AM - 10:10 AM	<b>Welcome and Opening Remarks</b> <i>Laura C. Fulginiti, PhD; James R. Gill, MD</i>
10:10 AM - 10:35 AM	<b>The Forensic Pathology Perspective</b> <i>Joyce L. deJong, DO</i>
10:35 AM - 11:00 AM	<b>The Forensic Anthropology Perspective</b> <i>Christian Crowder, PhD</i>
11:00 AM - 11:25 AM	<b>The Judicial Perspective</b> <i>Pamela A.W. King, JD</i>
11:25 AM - 11:30 AM	<b>Panel Discussion</b> <i>Laura C. Fulginiti, PhD; James R. Gill, MD; Joyce L. deJong, DO; Christian Crowder, PhD; Pamela A.W. King, JD</i>

# MENTORSHIP PROGRAM BREAKFAST

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*RSVP was Required by Jan. 13*

Thursday, February 16, 2023

7:30 AM – 8:30 PM

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Are you interested in mentoring a colleague or would you like to have a mentor to help guide your professional growth in your discipline? If so, please join the AAFS Mentorship Program Breakfast. We will discuss the program, solicit participation, and begin the matching process for those ready to commit.

Many in the Academy have already notified the committee of their interest in the program and are on the Mentorship Program roster. This breakfast will mark the official beginning of hopefully numerous productive relationships. If you have already agreed to participate, definitely plan on joining us for breakfast.

Orlando conference registrants interested in attending, please complete the survey found [HERE](#). You must RSVP by January 13.

For those unable to make it to Orlando, 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).

## 75<sup>TH</sup> ANNIVERSARY DIAMOND JUBILEE CELEBRATION

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**Friday, February 17**

**7:00 PM - 10:00 PM**

**Rosen Terrace**

**Tropical Theme**

**Food, Beverages, Live Entertainment,  
and Commemorative Party Gifts!**

**Tickets: \$35**

# CASE BREAK SESSIONS

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*Case Break Sessions are modified sessions where interesting case presentations—typically of entertainment value—are made during a time when attendees can sit in on a session during what would normally be their breakfast time while learning at the same time.*

## **CB1      Judicial Misconduct or Judicial Discretion: A Historical Perspective and Case Analyses**

**Wednesday, February 15, 2023**

**7:15 AM – 7:45 AM**

**CE Hour: .5**

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### **Patricia Smith, MSL, ACP**

Harris County District Attorney's Office  
Houston, TX

### **Betsy Adelizzi, PhD**

Missouri Southern State University  
Joplin, MO

**Learning Overview:** The goal of this presentation is to create an open and honest dialogue about the criminal justice system and those taxed with the responsibility of ensuring a fair and just system through inclusion, diversity, and with public safety in mind. Attendees will learn about local, state, federal, and international cases and will be afforded an opportunity to be the “trier of fact” and play a role in sanctioning the sanctioners.

**Impact Statement:** This presentation will impact the forensic science community by reminding all attendees of their role in making positive and effective changes to the criminal justice system by focusing on fairness to all parties and accountability for all people involved, through collaborative research and practice with multiple disciplines.

The judiciary is a system of courts and judges interpreting the laws passed by the legislature. The judiciary has evolved over the past thousand years and continues to change in an attempt to meet the needs of society. The makeup of the judiciary originated with a Lord or his stewards and continued to evolve to the elected and appointed judges today. “The very first judges . . . were court officials who had particular experience in advising the King . . .”<sup>1</sup> The earliest days of the judiciary, prior to the 12th century, was barbaric at best and based on a type of divine justice.

Divine justice could involve the accused being forced to sink or swim as a way of proving their innocence. One’s guilt or innocence was not based on law, judicial discretion, or witnesses, but on chance, strength of the accused trying to force himself to sink to show innocence or remain on top, floating, to show his guilt.<sup>1</sup> Another example is a “medicine man” holding two hairs from an accused in his tent and the accused’s guilt or innocence was based on if those hairs remained in place the next day.<sup>2</sup>

The judiciary is arguably a system built around those people with legal expertise, ethical behavior, and fairness. As the judiciary’s evolution continued, the need for codes of conduct and constitutional clarity increased. There are times when the judiciary, or more specifically, certain judges argue judicial independence as a justification for unpopular or sometimes inappropriate conduct. According to Cynthia Gray, “A federal judge argued that the principles of judicial independence incorporated in the United States Constitution barred any sanction for “anything to do with anything that happened when the judge . . . was acting and deciding cases or in any phase of the decisional function,” including “anything that the judge does verbally or physically in the course of adjudication.”<sup>2</sup>

We will review the judiciaries of Canada, California, Texas, the United Kingdom, and Asia. Also, we will discuss specific Harris County cases and engage the audience through polling.

### **Reference(s):**

1. History of the Judiciary. Courts and Tribunals Judiciary, London, July 26, 2021. <https://www.judiciary.uk/about-the-judiciary/history-of-the-judiciary/>.
2. Gray, Cynthia. The Line Between Legal Error and Judicial Misconduct: Balancing Judicial Independence and Accountability. Hofstra Law Review: Vol. 32: iss. 4, Article 11. <http://scholarlycommons.law.hofstra.edu/hlr/vol32/iss4/11>

# CASE BREAK SESSIONS

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## CB2 Not Always What It Looks Like: Death Due to Tricyclic Antidepressant Overdose

Thursday, February 16, 2023

7:15 AM – 7:45 AM

CE Hour: .5

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**Marie E. Lasater, MSN**  
Texas County Coroner's Office  
Houston, MO

**Learning Overview:** The goal of this presentation is to aid attendees in distinguishing forensic countermeasures used by suicidal persons who do not want to be ruled a suicide.

**Impact Statement:** This presentation will impact the forensic science community by exploring the use of a psychological autopsy when determining manner of death in a possible suicide.

This presentation describes a case study involving possible forensic countermeasures in a suicidal death involving grief, alcoholism, gabapentinoids, and nortriptyline and the process of accurately determining cause and manner of death. Toxicity of tricyclic antidepressants and their role in suicide is discussed, including cardiotoxicity and seizures. Aspects of the case, including investigation and differential diagnosis, are outlined.

As part of the death investigation, a psychological autopsy was performed, with the decedent's prescribing physician and only remaining relative (and heir) interviewed. Of note, the decedent had spent several years in her medical career in a urology clinic and was likely aware of drug toxicity. Her physician stated she specifically requested nortriptyline as an antidepressant. He was unaware of literature available on the internet promoting its use in the process of suicide. The decedent's heir was shocked to hear the death was ruled suicide. She was not aware of any suicidal ideation, but had been requested to relocate to live with the decedent, which she was unable to do at the time. Taking into consideration the decedent's history of alcohol abuse, empty bottles of alcohol at the scene, her knowledge of toxicology, and the location of the three empty bottles of medication found on the floor with their caps on, attempted forensic countermeasures (to preclude suicide) on the part of the decedent cannot be ruled out.

Performed by certified professionals, a psychological autopsy is a best practice postmortem data collection procedure performed in addition to any other official death examination. A psychological autopsy helps to reconstruct the proximate and distal contributing factors of an individual's death by suicide and document the most likely manner of death where that manner of death is equivocal and left undetermined by a medical examiner or coroner. Suicidology is an important methodology in the role of any death investigator.

# CASE BREAK SESSIONS

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## CB3 Postmortem Assessment of Anaphylactic Shock Due to Hymenoptera Stings (Yellow Jacket *Vespula*)

Friday, February 17, 2023

7:15 AM – 7:45 AM

CE Hour: .5

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**Elena Forzese, MD**  
Messina University  
Messina, ITALY

**Claudina Pitrone, MD**  
Messina University  
Messina, ITALY

**Learning Overview:** After attending this presentation, attendees will understand that Hymenoptera stings (bees, wasps) are among the most common causes of anaphylaxis, defined as a severe, rapid onset of a systemic allergic reaction which, if not promptly treated, can be fatal.

**Impact Statement:** This presentation will impact the forensic science community by highlighting the role of ancillary postmortem investigations in the diagnosis of anaphylactic shock caused by bee stings when no macroscopically evident signs are detected during either on-spot examination and autopsy.

To this regard, we here present the case of a 45-year-old man who, according to the circumstantial data collected, was hit by a swarm of bees while opening a shed at work, dying shortly thereafter. No signs of bee stings were macroscopically evident during the survey, nor was any sign of anaphylactic shock (angioedema, pharyngeal/laryngeal oedema, petechial hemorrhages) observed during autopsy. The only macroscopic findings consisted of mild pulmonary edema with mild swelling of the upper lip; heart and coronary arteries were macroscopically undamaged.

Considering that the absence of postmortem findings does not necessarily exclude the diagnosis of anaphylaxis (since macroscopic signs can resolve during the postmortem period), to clarify the possible cause of death, histological and biochemical investigations were performed, especially in light of the available circumstantial data. Biochemical assays included serum sampling for Radioallergosorbent testing (RAST) for bee venom specific IgE, which showed positive for the venom of the yellow jacket (type of *Vespula*); other biochemical tests highlighted an increase in tryptase and troponin; samples of heart, larynx, trachea, lungs, and spleen were also collected for immunohistochemical tests in order to evaluate the mast cells infiltrate using anti-tryptase antibodies.

Therefore, based on anamnestic (absence of any other pathology worthy of note), circumstantial (exposure to bee sting), histological, and biochemical data, the diagnosis of death was stated as due to anaphylactic shock although there was an absence of macroscopic signs at autopsy.

The case showed the importance of second-level investigations for the postmortem diagnosis of anaphylactic shock, highlighting the usefulness of biochemical and immunohistochemical analysis. In complex cases, a multidisciplinary approach, such a criteria exclusion cause of death, represents an important method of investigation. Moreover, in such cases, the circumstantial data can provide important data to perform specific postmortem investigations aimed at finding the substance responsible for the anaphylaxis.

# LUNCHEON SEMINARS

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*Pre-Registration Required by Jan. 30*

## LS1 The Lindbergh Kidnapping Suspect No. 1—The Man Who Got Away

Thursday, February 16, 2023

12:00 PM – 1:30 PM

CE Hours: 1.0

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**Hon. Lise A. Pearlman, JD\* (Ret.)**

First Presiding Judge of the CA State Bar Court  
Oakland, CA

**Learning Overview:** Attendees will gain insight into how key forensic evidence was suppressed and physical evidence altered to convict an innocent man of “the crime of the century.”

**Impact Statement:** The anticipated impact on the forensic science community is greater awareness of ways in which members’ forensic analysis and testimony can be misused (e.g., suppression of pretrial notes, overstating conclusiveness of findings, denial of a fair opportunity to the other side to test physical evidence) to cause a miscarriage of justice. This talk will also provide an example of how forensic scientists can play an important role in revealing the truth and exonerating the wrongly convicted.

**Program Description:** This luncheon talk by retired judge and award-winning author Lise Pearlman will discuss a proposed shocking solution to the 90-year-old mystery of the 1932 kidnap/murder of Charles Lindbergh, Jr. based on the best-selling 2020 true crime book, *The Lindbergh Kidnapping Suspect No. 1—The Man Who Got Away*. The talk will describe the framing of Bruno Richard Hauptmann for the murder of Charles Lindbergh, Jr. and the revelation of Suspect No. 1 whom the New Jersey State Police let get away with the crime. The talk will focus on wood evidence, fingerprints, and handwriting analysis, and address disparities between the “evidence” presented at trial and related contradictory evidence that was concealed by the prosecution and consequently not presented to the jury.

*Pre-Registration Required by Jan. 30*

## LS2 Forensic Sciences and Popular Poetry: A Lighter Way of Teaching People How Science Works

Friday, February 17, 2023

12:00 PM – 1:30 PM

CE Hours: 1.0

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**Jose A. Medeiros, PhD**

Brazilian Federal Police  
Cabedelo, PB, Brazil

**Learning Overview:** Upon completion of this luncheon seminar, the participant should be able to know how the dissemination of forensic sciences among people can be efficient and lighter through popular poetry, based on this Brazilian testimony.

**Impact Statement:** Showing the international forensic community how the dissemination of forensic sciences through popular poetry is effective among the general public and has encouraged Brazilian forensic scientists to identify themselves with their labor as well as with a literature genre (including woodcutting illustrations) that has become essentially Brazilian and that today is an example of national intangible cultural heritage.

**Program Description:** This work is about an initiative that has been developed since 2012: to bring together Forensic Science and popular poetry in a simple and accessible format and share it with the lay public. The path used was “Literatura de Cordel”, a form of literature originally European, but which found fertile ground in the Northeast of Brazil, especially from the 19th century onwards. Like a Limerick, the cordel booklet presents a story usually in a humorous tone and in colloquial language. Today there are already 14 stories about CSI, Forensic Engineering, Genetics, Jurisprudence, Environmental, Toxicology, Children’s History, etc. and more than 18 thousand copies distributed free of charge to people from all Brazilian regions at forensic events, criminalistics units, schools and institutions.

# LUNCHEON SEMINARS

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*Pre-Registration Required by Jan. 30*

## LS3 Junk Science and the American Criminal Justice System: An Inside Perspective

Friday, February 17, 2023

12:00 PM – 1:30 PM

CE Hours: 1.0

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**M. Chris Fabricant, JD**  
The Innocence Project  
New York, NY

**Learning Overview:** After attending this presentation, attendees will have gained insight from an insider's perspective into the heart of a broken American criminal justice system where junk science is just one piece in maintaining the status quo, including insight from the author's recently released, award-winning book, *Junk Science and the American Criminal Justice System*.

**Impact Statement:** This presentation will impact the forensic science community by demonstrating the perspective of the Innocence Project's Director of Strategic Litigation, one of nation's leading junk science wrongful conviction litigators, on the era that saw statements such as "one-in-a-million chance" as acceptable science and a new era of reliability, validation, and, most of all, the accountability we expect to see today.

**Program Description:** In 2012, the Innocence Project began searching for prisoners convicted by junk science, and three men, each convicted of capital murder, became the author's clients. In his book, *Junk Science and the American Criminal Justice System*, the author chronicles his fight to overturn their wrongful convictions and end the use of the bad science that destroyed these men's lives. The quest took many turns and the story weaves together courtroom battles over faulty forensics from Mississippi to Texas to New York City and beyond. The book describes a journey into the heart of a broken, racist system of justice and the role forensic science plays in maintaining that broken system.

In addition to some of the interesting case studies demonstrated in the book, the author's career documents the slow but steady evolution of the field of forensics as a whole and the difficult challenges and barriers that the Innocence Project, lawyers, judges, other stakeholders, and forensic scientists themselves have faced in evolving and moving forward from duplicitous times.

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

## W1 Investigating Publishing: How to Disseminate Your Work

Monday, February 13, 2023

8:30 AM – 4:00 PM

CE Hours: 5.5

**Learning Overview:** After attending this workshop, attendees will be able to review and prepare their own work for a scientific publication; determine the best publication venue for specific educational work; develop case work experiences for publication; and create self-promotion through various means on social media.

**Impact Statement:** This workshop will impact the forensic science community by increasing awareness of the importance of dissemination through educational publications. People within the forensic science community will be able to learn how to best share their work through textbooks, journals, open resources, and social media.

**Program Description:** It is important for practitioners and educators to share the work done both in the field and in the classroom. Knowing the best ways to publish various types of research and practice can be a challenging task. This workshop will share best practices in scientific publishing. This will include an introduction to scientific publishing, building a strong foundation for your publication, identifying where to publish, working with the peer-review process, transitioning casework into publications, and promoting your work via social media. There will also be a hands-on session to allow participants to bring questions and examples of work for publication.

*Chair:*

**Lerah Sutton, PhD**  
University of Florida  
Gainesville, FL

*Presenters:*

**Adrienne Brundage, PhD**  
Texas A&M University  
College Station, TX

**Jason Byrd, PhD**

University of Florida  
Gainesville, FL

*Co-Chair:*

**Gina Londino-Smolar, MS**  
IUPUI  
Indianapolis, IN

**Kelly Elkins, PhD**

Towson University  
Towson, MD

**Sharon Plotkin, EdD**

Miami-Dade College  
Miami, FL

**Target Audience:** All Sections

**Knowledge Level Required:** Basic

**Program:**

8:30 AM – 8:45 AM	<b>Opening Remarks</b> <i>Gina Londino-Smolar, MS</i>
8:45 AM – 9:30 AM	<b>Introduction to Scientific Publishing</b> <i>Lerah Sutton, PhD</i>
9:30 AM – 10:15 AM	<b>Building a Strong Foundation for Your Publication</b> <i>Adrienne Brundage, PhD</i>
10:15 AM – 10:30 AM	<b>BREAK</b>
10:30 AM – 11:15 AM	<b>Identifying Where to Publish Your Work</b> <i>Kelly Elkins, PhD</i>
11:15 AM – 12:00 PM	<b>Working Within the Peer Review Process</b> <i>Jason Byrd, PhD</i>



# WORKSHOPS

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## **W1**      **Investigating Publishing: How to Disseminate your Work**

### **Program cont.**

12:00 PM – 1:15 PM	<b>BREAK</b>
1:15 PM – 2:00 PM	<b>Transitioning Casework in Professional Publications and Portfolios</b> <i>Sharon Plotkin, EdD</i>
2:00 PM – 2:45 PM	<b>Breakout Session</b>
2:45 PM – 3:00 PM	<b>BREAK</b>
3:00 PM – 3:45 PM	<b>Promoting Your Publication in Social Media</b> <i>Gina Londino-Smolar, MS</i>
3:45 PM - 4:00 PM	<b>Closing Remarks</b> <i>Jason Byrd, PhD</i>

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

## W2 Implementing Magnetic Flux Measurements for Forensic Document Examinations

Monday, February 13, 2023

8:30 AM – 5:00 PM

CE Hours: 5.75

**Learning Overview:** After attending this workshop, attendees will be able to recall and discuss the scientific theory which underlies the instrumentation involved with magnetic flux measurements. They will be able to explain what magnetic properties toner has, and how they can be measured. Attendees will be able to prepare a laboratory setup with a magneto-optical imaging device and identify critical variables in the laboratory design which could impact instrument function. They will be able to follow the methodology provided and operate the instrument to collect magnetic flux measurements from different toner samples. Attendees will be able to evaluate the results that they obtain to determine if there has been any type of error or if there is bias. Attendees will be able to interpret the significance of the results.

**Impact Statement:** This workshop will impact the forensic science community by providing Questioned Document examiners with the knowledge, skills, and abilities necessary to deploy a new methodology for examination of toner printed documents in their laboratories. This methodology has been found to meet the needs of the community as stated, being rapid, non-destructive, and cost-effective.

**Program Description:** In this program, attendees will learn about the foundational theory behind magneto-optical imaging devices (MOIDs) and magnetic flux measurements of toners, as well as the variables which must be considered when developing a method for forensic laboratory use, and afterwards will get hands-on experience with instrumentation. During the hands-on portion of the program, attendees will learn how to set up the workspace and instrument, how to operate the software associated with the MOID, and how to conduct magnetic flux measurements of different toner samples (including text samples, point samples, and text insertion samples). The attendees will then be able to independently conduct measurements on provided samples to demonstrate their proficiency with the instrumentation and methodology that they have learned. Finally, as a group, the attendees and instructors will evaluate the results of the independent measurements. At this stage, the attendees will learn how to evaluate and interpret the significance of the results which they obtain from the instrument, and how to assess if the data has been affected by any of the variables discussed during the theoretical session.

*Chair:*

**Carrie Polston, PhD**

Universite de Lausanne

Lausanne, Vuad, SWITZERLAND

*Co-Chair:*

**Zain Bhaloo, MSc**

Canada Border Services Agency

Ottawa, Ontario, CANADA

**Target Audience:** Questioned Documents

**Knowledge Level Required:** Basic

**Program:**

8:30 AM – 10:00 AM     **Section 1: Theory**  
*Carrie Polston, PhD; Zain Bhaloo, MSc*

10:00 AM – 10:30 AM     **BREAK**

10:30 AM – 12:00 PM     **Section 2: Implementation**  
*Carrie Polston, PhD; Zain Bhaloo, MSc*

12:00 PM – 2:00 PM     **BREAK**

2:00 PM – 3:00 PM     **Section 3: Evaluation**  
*Carrie Polston, PhD; Zain Bhaloo, MSc*

3:00 PM – 3:30 PM     **BREAK**

3:30 PM – 4:15 PM     **Section 4: Questions & Discussion**  
*Carrie Polston, PhD; Zain Bhaloo, MSc*

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W3 Forensic Postmortem Radiology: Crossing the Border Between Radiology and Pathology**

**Monday, February 13, 2023**

**8:30 AM – 4:00 PM**

**CE Hours: 6.25**

**Learning Overview:** After attending this workshop, attendees will: (1) learn the basics in how to get started in the field of forensic radiology, (2) understand the current state of the art and levels of evidence in forensic radiology, (3) learn about applications to assist forensic pathologists and practitioners in medical death investigation, and (4) be made aware of potential resources available to interested practitioners.

**Impact Statement:** This presentation will impact the forensic science community by providing attendees with expertise from around the world on the use of, best practices and the evidence base of forensic postmortem radiology.

**Program Description:** This workshop will give an overview of the current state of forensic imaging in the world, the logistics on how to start a forensic imaging program, and how future technologies may impact the field of forensics.

*Chair:*

**Summer Decker, PhD**

University of South Florida  
Tampa, FL

*Co-Chair:*

**Edward Mazuchowski, MD**

Forensic Pathology Associates  
Allentown, PA

*Presenters:*

**Michael J. Thali, MD**

University of Zurich  
Zurich, SWITZERLAND

**Natalie Adolphi, PhD**

University of New Mexico School of Medicine  
Albuquerque, NM

**Fabrice Dedouit, MD**

University Hospital of Toulouse  
Toulouse, FRANCE

**Lars Ebert, PhD**

University of Zurich  
Zurich, SWITZERLAND

**Jonathan M. Ford, PhD**

University of South Florida  
Tampa, FL

**Hideki Hyodoh, MD**

University of Fukui School of Medicine  
Fukui, JAPAN

**Chris O'Donnell, MBBS**

Victoria Institute of Forensic Medicine  
Victoria, BC, CANADA

**Rick R. Van Rijn, MD**

Netherlands Forensic Institute  
Amsterdam, NETHERLANDS

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

**Knowledge Level Required:** Basic

# WORKSHOPS

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## **W3 Forensic Postmortem Radiology: Crossing the Border Between Radiology and Pathology**

### **Program:**

8:30 AM – 9:00 AM	<b>Introductions, Background, and Historical Overview</b> <i>Michael Thali, MD</i>
9:00 AM – 9:30 AM	<b>Integrating Forensic Imaging Into the Medicolegal Investigation: Practical Steps</b> <i>Edward L Mazuchowski, MD, PhD</i>
9:30 AM – 10:00 AM	<b>Development of a Forensic CT Service in a Medical Examiner Office</b> <i>Natalie L. Adolphi, PhD</i>
10:00 AM – 10:30 AM	<b>PMCT Status in Australia: An International Perspective</b> <i>Chris O'Donnell, MBBS</i>
10:30 AM – 10:45 AM	<b>BREAK</b>
10:45 AM – 11:30 AM	<b>Directed PMCT Angiography and Evaluation of Resuscitative Medical Therapy</b> <i>Edward L Mazuchowski, MD, PhD</i>
11:30 AM – 12:00 PM	<b>Forensic Postmortem CT in Children: Application and Limitations</b> <i>Rick R. van Rijn, MD, PhD</i>
12:00 PM – 12:30 PM	<b>Interactive Cases I</b> <i>Rick van Rijn, MD, PhD</i>
12:30 PM – 1:30 PM	<b>BREAK</b>
1:30 PM – 2:00 PM	<b>PMCT in Disaster Victim Identification</b> <i>Summer Decker, PhD</i>
2:00 PM – 2:30 PM	<b>Postmortem Cardiac Imaging</b> <i>Fabrice Dedouit, MD, PhD</i>
2:30 PM – 3:05 PM	<b>3D Visualization in Forensic Postmortem Radiology: Possibilities and Examples</b> <i>Summer Decker, PhD</i>
3:05 PM – 3:20 PM	<b>BREAK</b>
3:20 PM – 3:50 PM	<b>The Use of MRI in Forensic Postmortem Imaging</b> <i>Hideki Hyodoh MD, PhD</i>
3:50 PM – 4:30 PM	<b>Emerging Technologies in Forensic Imaging</b> <i>Jonathan Ford, PhD; Lars Ebert, PD, PhD</i>
4:30 PM – 5:00 PM	<b>Interactive Cases II</b> <i>Summer Decker, PhD; Lars Ebert, PD, PhD; Jonathan Ford, MD</i>

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

## **W4 Just Communications: Providing Clear and Accurate Reports and Testimony on Forensic DNA Results**

**Monday, February 13, 2023**

**8:00 AM – 5:00 PM**

**CE Hours: 7.75**

**Learning Overview:** DNA experts are asked in court to translate hours of chemistry and complex statistical analysis into yes or no answers. We learn to do this from previous experts who teach us the terms of art, metaphorical examples, and boundaries of permissible expert opinion. Like all human communication this is an evolving art that adjusts to changes in science, computation, law and culture. After attending this presentation, DNA analysts, lawyers, judges, and other criminal justice stakeholders will be better able to evaluate and communicate laboratory procedures and findings. They will be encouraged to adopt agile practices for clear and accurate testimony on the witness stand, and will be familiar with tips and tricks for guarding against common pitfalls. Participants will also learn from examples that have led to wrongful convictions, including bias in DNA mixture interpretation.

**Impact Statement:** This presentation impacts the scientific community by discussing the critical consequences that can result from false or misleading testimony that is anecdotal rather than based on empirical data and ways labs and individual analysts may mitigate some of these consequences through technical training, testimony oversight and quality management.

**Program Description:** It is essential that forensic scientists are able to clearly and accurately communicate their work, whether it is casework results or new research. This includes talking to other scientists, investigators, attorneys, judges or jury members, all of which present their own challenges. The presenters will discuss language choice and the impact of certain words and phrases in Forensic DNA reports and testimony and methods for resisting pressures from criminal justice stakeholders to stretch testimony beyond the limits of what science can support. Presenters will discuss best practice for communicating scientific results in reports and courtroom testimony to ensure results are being understood and not misunderstood. Topics that will be covered in the presentation are DNA transfer, persistence, prevalence and recovery; the hierarchy of propositions; evaluating findings given activity level propositions; and human factors and cognitive bias.

*Chair:*

**Tiffany A. Roy, JD, MS**  
ForensicAid  
West Palm Beach, FL

*Co-Chair:*

**Cynthia Cale, MS**  
CMC Forensic DNA Consulting, LLC  
New Caney, TX

*Presenters:*

**Greg Hampikian, PhD**  
Boise State University  
Boise, ID

**Julie Burrill, PhD**  
University of Dundee  
Stony Brook, NY

**Target Audience:** Criminalistics, Jurisprudence, Pathology/Biology

**Knowledge Level Required:** Basic

**Program:**

8:00 AM – 10:00 AM	<b>How to Practically Establish Multidisciplinary Audience-Based Communication</b> <i>Julie Burrill, PhD</i>
10:00 AM – 12:00 PM	<b>Human Factors in Forensic Testing and Reporting</b> <i>Tiffany Roy, JD, MS</i>
12:00 PM – 1:00 PM	<b>BREAK</b>
1:00 PM – 3:00 PM	<b>Case Assessment &amp; Interpretation: Review &amp; Application of DNA-TPPR Research</b> <i>Cynthia Cale, MS</i>
3:00 PM – 5:00 PM	<b>Case Examples From the Idaho Innocence Project and the Forensic Justice Project</b> <i>Greg Hampikian, PhD</i>

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W5 Diversity, Equity, and Inclusion in the World of Forensic Practice: Lessons and Actions**

**Monday, February 13, 2023**

**8:30 AM – 5:00 PM**

**CE Hours: 6.5**

**Learning Overview:** Upon completing this workshop, the attendee should be able to acknowledge the need to address historic and ongoing issues of diversity, equity, and inclusion as they impact the forensics community at all levels. With this understanding of the need for action, the participant will be armed with a potential path to light the spark of productive change within their own organization in order to move towards parity for all.

**Impact Statement:** This workshop will impact the Forensic Science Community by addressing many issues encountered impacted by failure to recognize diversity, equity, and inclusion, thus allowing them to see the scope of the problem from a historical and present-day view. This recognition of the breadth and depth of the problem - along with a primer on working within organizations to make changes for the better, will lead the community towards unity and fairness.

**Program Description:** This workshop will focus on social justice in the forms of diversity, equity, and inclusion (DEI). E pluribus unum. From many one. From it's founding, the United States has been seen a celebration of strength through diversity, although that lesson that can be too easily forgotten, lost, or worse. Diversity, equity, and inclusion (DEI) can be viewed as a means to that lofty ideal – that all people are created equal. Efforts toward social justice attempt to level the playing field for all members of society at local, regional, national, and international levels. Targeted sessions on general forensic practice, medicolegal forensics, representing the hated, and humanitarian efforts will illustrate the need for DEI to strive for parity. The story of the tragic “Pulse shooting” illustrates the depths of depths of depravity but also tells the success that can be achieved by embracing unity through diversity. Finally a primer to ignite organizational efforts will provide a roadmap to a path forward for all.

*Chair:*

**J.C.U. Downs, MD**  
forensX, LLC  
Savannah, GA

*Co-Chair:*

**Gina Londino-Smolar, MS**  
IUPUI  
Indianapolis, IN

*Presenters:*

**Claude Roux, PhD**  
University of Technology Sydney  
Sydney, AUSTRALIA

**Ann Geisendorfer, JD**  
SUNY Delhi  
Delhi, NY

**Jan Gorniak, DO**  
Clark County Coroner/Medical Examiner  
Las Vegas, NV

**Ashley Pennington, JD**  
Charleston County Public Defenders Office  
Charleston, SC

**Duarte Vieira, MD**  
University of Coimbra  
Coimbra, PORTUGAL

**Robin Maynard, AS**  
Libby's Legacy Breast Cancer Foundation  
Orlando, FL

**James McKim, PMP**  
Organizational Ignition, LLC  
Goffstown, NH

**Target Audience:** All Sections

**Knowledge Level Required:** Basic

# WORKSHOPS

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## W5 Diversity, Equity, and Inclusion in the World of Forensic Practice: Lessons and Actions

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### Program:

8:30 AM – 8:35 AM	<b>Introduction</b> <i>J.C.U. Downs, MD</i>
8:35 AM – 9:15 AM	<b>DEI in Everyday Forensic Practice</b> <i>Claude Roux, PhD</i>
9:15 AM – 10:00 AM	<b>Bias in the Classroom</b> <i>Ann Geisendorder, JD</i>
10:00 AM – 10:15 AM	<b>BREAK</b>
10:15 AM – 11:00 AM	<b>Bias in Medicine</b> <i>Jan Gorniak, DO</i>
11:00 AM – 11:45 AM	<b>Representing Those We Dislike</b> <i>Ashley Pennington, JD</i>
11:45 AM – 12:00 PM	<b>Questions and Answers</b>
12:00 PM – 1:30 PM	<b>BREAK</b>
1:30 PM – 2:15 PM	<b>DEI in Humanitarian Forensic Action</b> <i>Duarte Vieira, MD</i>
2:15 PM – 3:00 PM	<b>The Pulse Shooting—The Phoenix Rises</b> <i>Robin Maynard, AS</i>
3:00 PM – 3:15 PM	<b>BREAK</b>
3:15 PM – 4:45 PM	<b>The Diversity Factor: Igniting Superior Organizational Performance</b> <i>James McKim, PMP</i>
4:45 PM – 5:00 PM	<b>Questions and Answers</b>

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



**FSF**  
FORENSIC SCIENCES  
FOUNDATION

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W6      How Science Works to Identify Unknown Decedents Decades After Death**

**Monday, February 13, 2023**

**8:30 AM – 5:15 PM**

**CE Hours: 7.0**

**Learning Overview:** After attending this workshop, attendees will better understand how science works in a multidisciplinary approach to identify unknown decedents decades after death via multiple lines of evidence and objective data.

**Impact Statement:** The presentations in this workshop will impact the forensic science community by illustrating a trustworthy process that uses anthropology alongside historical research, archaeology, material evidence analysis, odontology, and biological/chemical analyses—underpinned by a comprehensive quality assurance program and case management system—to make identifications.

**Program Description:** This workshop will highlight the case resolution process at the Defense POW/MIA Accounting Agency where identifying decedents decades after death is the norm. The presenters will demonstrate the need for objective data from the disciplines of Forensic Archaeology, Forensic Anthropology, Forensic Odontology, Material Evidence Analysis, Chest Radiograph Comparison, Isotope Analysis, and DNA Analysis to support forensic identification using case examples. Participants will learn how a robust surety, or quality assurance, program ensures all scientific work is trustworthy and above reproach in an ASI National Accreditation Board (ANAB) -accredited laboratory. A special emphasis will be included at the end of the workshop to bring all the methods/evidence together to make a complete case for an identification. This integrated portion of the workshop is designed to help the practitioner understand why a multidisciplinary approach is necessary for cold case resolution.

*Chair:*

**Rebecca J. Wilson-Taylor, PhD**

Defense POW/MIA Accounting Agency  
Kapolei, HI

**Kristin Bukovec, BS**

Defense POW/MIA Accounting Agency  
Mililani, HI

**J.S. DeMeo, DMD**

Defense POW/MIA Accounting Agency  
Honolulu, HI

**Timothy P. McMahon, PhD**

Defense Health Agency  
Camden, DE

**Denise To, PhD**

Defense POW/MIA Accounting Agency  
Kailua, HI

**John E. Byrd, PhD**

Defense POW/MIA Accounting Agency  
Mililani, HI

*Co-Chair:*

**Gregory E. Berg, PhD**

Defense POW/MIA Accounting Agency  
Kaneohe, HI

**Lesley A. Chesson, MS**

Defense POW/MIA Accounting Agency  
Joint Base Pearl Harbor-Hickam, HI

**Susan Jaques, MA**

Defense POW/MIA Accounting Agency  
Joint Base Pearl Harbor-Hickam, HI

**Owen O’Leary, PhD**

Defense POW/MIA Accounting Agency  
Joint Base Pearl Harbor-Hickam, HI

**Elizabeth Andreas-Feeney, BS**

Defense POW/MIA Accounting Agency  
Joint Base Pearl Harbor-Hickam, HI

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

**Knowledge Level Required:** Basic



# WORKSHOPS

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## W6 How Science Works to Identify Unknown Decedents Decades After Death

### Program:

8:30 AM – 8:45 AM	<b>Welcome &amp; Overview</b> <i>John Byrd, PhD</i>
8:45 AM – 9:30 AM	<b>Science Begins in the Field with Forensic Archaeology</b> <i>Denise To, PhD</i>
9:30 AM – 10:15 AM	<b>Forensic Anthropology at the DPAA</b> <i>Rebecca Wilson-Taylor, PhD</i>
10:15 AM – 10:30 AM	<b>BREAK</b>
10:30 AM – 11:15 AM	<b>Dental Identifications in Military Cases at the DPAA</b> <i>J.S. DeMeo, DMD</i>
11:15 AM – 12:00 PM	<b>Contextual, Circumstantial, and Individualizing Data of Material Evidence</b> <i>Owen O’Leary, PhD</i>
12:00 PM – 1:00 PM	<b>BREAK</b>
1:00 PM – 1:45 PM	<b>Chest Radiograph Comparison in Identifications of U.S. Military Personnel</b> <i>Susan Jaques, MA</i>
1:45 PM – 2:15 PM	<b>The Power of DNA for Cold Case Resolution: Time Depth, Relationships, and Technology</b> <i>Timothy McMahan, PhD</i>
2:15 PM – 2:30 PM	<b>BREAK</b>
2:30 PM – 3:15 PM	<b>Isotope Testing in the Forensic Identification Process</b> <i>Lesley Chesson, MS</i>
3:15 PM – 4:00 PM	<b>The Need for Robust Quality Assurance and Data Management Programs and Benefits of ANAB Accreditation</b> <i>Elizabeth Andreas-Feeney, BS; Kristin Bukovec, BS</i>
4:00 PM – 4:15 PM	<b>BREAK</b>
4:15 PM – 5:00 PM	<b>All the Puzzle Pieces Fit: Personal Identification at the DPAA</b> <i>Gregory Berg, PhD</i>
5:00 PM – 5:15 PM	<b>Questions and Answers</b>

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

**W7**

## **The Seven Habits for Highly Effective Standards Development**

**Monday, February 13, 2023**

**8:30 AM – 12:00 PM**

**CE Hours: 3.25**

**Learning Overview:** After attending this presentation, attendees will (1) gain a better understanding of the role and importance of consensus-based standards in strengthening forensic science in the United States and internationally; (2) gain a greater awareness of their own individual role in the development of consensus-based standards, and (3) learn how to provide input and get involved.

**Impact Statement:** The 2009 National Academy of Sciences (NAS) Report emphasized the need for standards in forensic science. Since this Report was issued, more than 140 forensic science standards have been published, and more than 100 of those have been placed on the Organization of Scientific Area Committees (OSAC) Registry. Still, many more discipline-specific standards are needed to continue to strengthen the field. Standards development is a long and sometimes contentious process. To be successful, those involved must be able to lead themselves and influence, engage, and collaborate with others. This workshop will provide attendees with information on how they can become more effective in the standards development process.

**Program Description:** Attendees will hear updates about forensic science standards development efforts in the United States and internationally. They will also gain a better understanding of ways to become more effective in participating in the development of consensus-based standards, including how to write documents, submit public and committee comments, and adjudicate those comments. Attendees will also learn the various ways they can get involved in forensic science standards development.

*Chair:*  
**Agnes Winokur, MS**  
Drug Enforcement Agency  
Miami, FL

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

**Karen Reczek, MLS**  
NIST  
Rockville, MD

*Co-Chair:*  
**Marc A. LeBeau, PhD**  
Federal Bureau of Investigation  
Quantico, VA

**Allison Getz, MS**  
NIST  
Monrovia, MD

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

**Target Audience:** Criminalistics, Digital & Multimedia Sciences, General, Jurisprudence, Odontology, Pathology/Biology, Questioned Documents, Toxicology

**Knowledge Level Required:** Basic

### **Program:**

8:30 AM – 8:45 AM	<b>Introduction and What's New Since AAFS 2022</b> <i>Teresa Ambrosius, BA</i>
8:45 AM - 9:15 AM	<b>How to Write a Good Standard</b> <i>Karen Reczek, MLS</i>
9:15 AM - 9:45 AM	<b>What is Consensus and How Do We Get There?</b> <i>Agnes Winokur, MS</i>
9:45 AM - 10:00 AM	<b>BREAK</b>
10:00 AM - 10:30 AM	<b>The Best Way to Write and Submit Comments</b> <i>Marc LeBeau, PhD</i>
10:30 AM - 11:00 AM	<b>How Are Comments Adjudicated?</b> <i>Kevin P. Kulbacki, MSFS</i>
11:00 AM - 11:15 AM	<b>How Can YOU Get Involved in the Standards</b> <i>Allison Getz, MS</i>
11:15 AM - 12:00 PM	<b>Questions and Answers</b>

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W8 Postmortem Interval Estimation Using a Novel Data Set and Methods**

**Monday, February 13, 2023**

**8:30 AM – 12:00 PM**

**CE Hours: 3.25**

**Learning Overview:** Attendees of this workshop will learn how to use geoFOR application to record decomposition characteristics and estimate the Postmortem Interval (PMI) using the available machine-learning models.

**Impact Statement:** This workshop will impact the forensic science community's practice by demonstrating a procedure for recording scene and decomposition information and machine learning models to estimate PMI.

This workshop will introduce a data repository and associated machine learning models to provide a novel method of estimating the PMI in the geoFOR application. The lack of a large reference dataset for developing reliable and accurate models has been a major barrier for improving methods for determining the time since death.

Since 2019, data from forensic cases and observations from anthropological research facilities have been collected in a reference dataset that contains over 1,500 cases from locations across the United States. This reference dataset is representative of forensic casework; it is geographically diverse and encompasses the various scenarios in which human remains are discovered in forensic casework. Along with decomposition characteristics, the application records location, which allows environmental data from existing databases from the National Oceanic and Atmospheric Administration (NOAA), such as temperature, humidity, and precipitation, to be tied to the location of death to model variables important in the decomposition process. The availability of this reference dataset allows for machine learning models to be employed to provide a robust estimate of PMI with an associated prediction interval.

This workshop will first demonstrate the application, reference data set, and the data entry process. Secondly, Geographic Information Systems (GIS) methods and spatial coding will be introduced to demonstrate how environmental datasets are automatically populated and used in the statistical models and how ArcGIS® is used to store and manage data for collaborators. Third, machine learning models that are used in the predictions of PMI from both observed decomposition variables and integrated environmental variables will be explained. Next, Bayesian generative models will be discussed. These methods are useful for improving research design for future studies of decomposition. For example, using expert knowledge and a priori knowledge, this information can be integrated to provide data-informed stages of decomposition or how decomposition variables are associated with body size or age. Finally, this workshop will provide an overview of how this project aims to follow an Open Science model from the National Institutes of Health with the goal of sharing scientific data to accelerate research discovery, enhance research rigor and reproducibility, provide accessibility to high-value datasets, and promote data reuse for future research studies. Participants will gain experience using the geoFOR application to input data, manage their data in ArcGIS®, and make predictions of PMI.

*Chair:*

**Katherine E. Welsenee, PhD**  
Clemson University  
Clemson, SC

*Co-Chair:*

**Cristina I. Tica, PhD**  
Clemson University  
Clemson, SC

*Presenters:*

**D. Hudson Smith, PhD**  
Clemson University  
Clemson, SC

**Carl Ehrett, PhD**

Clemson University  
Clemson, SC

**Patricia Carbajales-Dale, MS**

Clemson University  
Clemson, SC

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

**Knowledge Level Required:** Basic

# WORKSHOPS

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## **W8      Postmortem Interval Estimation Using a Novel Data Set and Methods**

### **Program:**

- |                     |   |
|---------------------|---|
| 8:30 AM – 8:45 AM   | <b>Introduction and Background</b><br><i>Katherine E. Weisensee, PhD</i>  |
| 8:45 AM – 9:15 AM   | <b>Survey Instrument and Data Manual</b><br><i>Cristina I. Tica, PhD</i>  |
| 9:15 AM – 10:00 AM  | <b>ArcGIS and Spatially Coded Environmental Data for Informing Models of Decomposition</b><br><i>Patricia Carbajales-Dale, MS</i> |
| 10:00 AM – 10:15 AM | <b>BREAK</b>  |
| 10:15 AM – 11:00 AM | <b>Machine-learning Models for Predicting PMI</b><br><i>Carl Ehrett, PhD</i>  |
| 11:00 AM – 11:45 AM | <b>Bayesian Methods for Generating Understanding of Decomposition Process</b><br><i>D. Hudson Smith, PhD</i>                      |
| 11:45 AM – 12:00 PM | <b>Open Science, Wrap-up, and Discussion of Next Steps</b><br><i>Katherine E. Weisensee, PhD</i>                                  |

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

## W9 Inside the Black Box: Forensic Psychiatry for Lawyers

Monday, February 13, 2023

9:00 AM – 5:00 PM

CE Hours: 6.5

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

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

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

*Chair:*  
**Corina Freitas, MD**  
Freitas and Associates  
Alexandria, VA

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

*Presenter:*  
**George D. Annas, MD**  
Forensic Psychiatry Consulting, LLC  
Syracuse, NY

**Target Audience:** Jurisprudence

**Knowledge Level Required:** Basic

### Program:

9:00 AM – 10:00 AM	<b>Introduction of Speakers, Topic, &amp; Basic Psychiatry</b> <i>Corina Freitas, MD</i>
10:00 AM – 12:00 PM	<b>History of Forensic Psychiatry and How to Formulate a Psychiatric-Legal Question</b> <i>Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD</i>
12:00 PM – 1:00 PM	<b>BREAK</b>
1:00 PM – 2:00 PM	<b>Ethics in Forensic Psychiatry</b> <i>Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD</i>
2:00 PM – 3:00 PM	<b>DSM-5, Diagnoses, and Psychological Testing</b> <i>Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD</i>
3:00 PM – 3:15 PM	<b>BREAK</b>
3:15 PM – 4:30 PM	<b>Active Case Participation</b> <i>Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD</i>
4:30 PM – 5:00 PM	<b>Questions and Answers</b>

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W10      Reefer Madness: The History of THC Psychosis and Modern Adverse Events**

**Monday, February 13, 2023**

**1:00 PM – 4:00 PM**

**CE Hours: 3.25**

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**Learning Overview:** After attending this workshop, attendees will have a better understanding of the state of cannabis legalization and regulations, the history of cannabis psychosis and adverse events, gaps in the scientific knowledge and promulgated mythology, modern incidents of adverse effects and potential mechanisms, and cases in which evidence and circumstances indicate THC-related psychosis. Content will enable attendees to influence, educate, and collaborate with stakeholders in their communities regarding threats to public health and public safety.

**Impact Statement:** This workshop will impact the forensic science community by increasing attendees' understanding of the complexities of the impacts of cannabis and THC analogs in our communities and the need for a multidisciplinary collaboration to know the incidents of adverse events and importance of appropriately and thoroughly describing the etiology of adverse events.

In many jurisdictions across the United States, alternative cannabimimetic products have erupted and proliferated. Due to knowledge gaps, confusion, and lack of enforcement, new products that are claimed to be legal and safe derivatives of hemp have been propagated. The pervasiveness of products containing synthetic (i.e., unnatural) THC isomers is well known in communities, as they are commonly sold in vape shops, Cannabidiol (CBD) stores, gas stations, and convenience stores. These synthetic THC isomers and derivatives include, but are not limited to,  $\Delta 8$ -THC,  $\Delta 10$ -THC,  $\Delta 6a$ -10a-THC, THC-acetate (THC-O), CBD-di-acetate (CBD-di-O), Tetrahydrocannabiphorol (THC-P), exo-THC, Hexahydrocannabinol (HHC), Tetrahydrocannabutol (THC-B), and halogenated THC. Unknown internet sources have misinterpreted the scientific literature, perpetuating falsehoods and misinformation, and consumers have a false sense of security in the quality and efficacy of these products. A current and significant challenge facing the United States is that the population of persons taking traditional THC products as well as these THC analogs is exponentially more than those who would consume the "older" synthetic cannabinoids. The incidence of reported adverse effects is on the rise, as demonstrated by the increase in calls to poison control centers. However, attribution of the adverse event to a defined drug rarely happens because the product consumed by the person is not analyzed for chemical content and toxicology testing is often limited. Conversely, symptomology and general health of persons is also rarely recorded in the event that products are tested from the self-reporting individual.

*Chair:*

**Michelle R. Peach, PhD**  
Virginia Commonwealth University  
Richmond, VA

*Co-Chair:*

**Nicholas B. Tiscione, MS**  
Palm Beach County Sheriff's Office  
West Palm Beach, FL

*Presenters:*

**Alaina Holt, BS**  
Virginia Commonwealth University  
Richmond, VA

**Justin L. Poklis, BS**

Virginia Commonwealth University  
Richmond, VA

**Adam White, PhD**

Adam J. White Clinical & Forensic Psychology  
West Palm Beach, FL

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

**Knowledge Level Required:** Basic

# WORKSHOPS

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## **W10     Reefer Madness: The History of THC Psychosis and Modern Adverse Events**

### **Program:**

- |                   |  |
|-------------------|--|
| 1:00 PM – 1:10 PM | <b>Introduction: Cannabis and THC Isomer Products Proliferation</b><br><i>Nicholas B. Tiscione, MS</i>                                   |
| 1:10 PM – 1:30 PM | <b>National Cannabis Legislation and Regulations</b><br><i>Michelle R. Peace, PhD</i>  |
| 1:30 PM – 1:50 PM | <b>THC Mythology and Knowledge Gap Analysis</b><br><i>Michelle R. Peace, PhD</i>   |
| 1:50 PM – 2:00 PM | <b>The Scope of THC Analogue Analytical Challenges</b><br><i>Alaina Holt, BS</i>   |
| 2:00 PM – 2:30 PM | <b>THC Psychosis: Historical Perspective and Modern Incidents</b><br><i>Justin L. Poklis, BS</i>   |
| 2:30 PM – 2:45 PM | <b>BREAK</b>   |
| 2:45 PM – 3:00 PM | <b>THC Adverse Effects Potential Mechanisms: Modern Literature</b><br><i>Michelle R. Peace, PhD</i>                                      |
| 3:00 PM – 3:45 PM | <b>Case Reports From the Practitioner Lab—Typical THC Impairment vs. THC Madness (Forensic Cases)</b><br><i>Nicholas B. Tiscione, MS</i> |
| 3:45 PM – 4:00 PM | <b>Case Report From the Research Lab—Self-Reported, Requested Product Analysis</b><br><i>Alaina Holt, BS</i>                             |
| 4:00 PM – 4:20 PM | <b>Case Report From the Practitioner—Psychiatric Clinical Case</b><br><i>Adam White, PhD</i>   |
| 4:20 PM – 4:30 PM | <b>Questions and Answers</b>   |

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W14      Transfer and Persistence of Physical Evidence: Deciphering Implications**

**Tuesday, February 14, 2023**

**8:30 PM – 4:30 PM**

**CE Hours: 6.0**

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

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

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

*Chair:*

**Brooke W. Kammrath, PhD**  
University of New Haven  
West Haven, CT

*Co-Chair:*

**Elaine M. Pagliaro, JD**  
Henry C. Lee Institute of Forensic Science  
West Haven, CT

*Presenters:*

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

**David San Pietro, PhD**  
University of New Haven  
West Haven, CT

**Claire L. Glynn, PhD**  
University of New Haven  
West Haven, CT

**Peter R. De Forest, DCrim**  
CUNY  
Greenburgh, NY

**Pauline E. Leary, PhD**  
KD Analytical  
Louisville, KY

**Target Audience:** Criminalistics, Jurisprudence

**Knowledge Level Required:** Basic



# WORKSHOPS

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## **W14**      **Transfer and Persistence of Physical Evidence: Deciphering Implications**

### **Program:**

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

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

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

**Tuesday, February 14, 2023**

**8:30 PM – 5:00 PM**

**CE Hours: 6.75**

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

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

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

*Chair:*

**Lorenzo Gitto, MD**

Cook County Medical Examiner's Office  
Chicago, IL

*Co-Chair:*

**Ponni Arunkumar, MD**

Cook County Medical Examiner's Office  
Chicago, IL

*Presenters:*

**Sarah Thomas, MD**

Office of the District 21 Medical Examiner  
Fort Myers, FL

**Gregory Webster, MD**

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

**David Waters, MD**

Cook County Medical Examiner's Office  
Chicago, IL

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

**Knowledge Level Required:** Basic

# WORKSHOPS

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

### **Program:**

8:30 AM – 8:45 AM	<b>Workshop Introduction</b> <i>Lorenzo Gitto, MD; Ponni Arunkumar, MD</i>
8:45 AM – 9:00 AM	<b>Cardiac Pathology and the Medical Examiner</b> <i>Ponni Arunkumar, MD</i>
9:00 AM – 9:30 AM	<b>Heart Anatomy, Histology, Physiology</b> <i>Sarah Thomas, MD; Gregory Webster, MD</i>
9:30 AM – 10:00 AM	<b>Atherosclerosis, Hypertension, Ischemic Heart Disease, Diseases of the Major Vessels, Valve Diseases</b> <i>David Waters, MD</i>
10:00 AM – 10:15 AM	<b>BREAK</b>
10:15 AM – 10:45 AM	<b>Sudden Cardiac Death</b> <i>Gregory Webster, MD</i>
10:45 AM – 11:45 AM	<b>Congenital Heart Diseases</b> <i>Sarah Thomas, MD</i>
11:45 AM – 12:15 PM	<b>Cardiomyopathies</b> <i>David Waters, MD</i>
12:15 PM – 1:15 PM	<b>BREAK</b>
1:15 PM – 1:30 PM	<b>Infections</b> <i>Lorenzo Gitto, MD</i>
1:30 PM – 1:45 PM	<b>Cardiac Tumors</b> <i>David Waters, MD</i>
1:45 PM – 2:00 PM	<b>Trauma and Artifacts</b> <i>Ponni Arunkumar, MD</i>
2:00 PM – 2:15 PM	<b>Miscellaneous (Devices, Prosthetic Heart Valves, Myocardial Bridging, Cardiac Toxicity, etc.)</b> <i>Lorenzo Gitto, MD; Sarah Thomas, MD, David Waters, MD</i>
2:15 PM – 3:15 PM	<b>Heart Dissection: Traditional and Special Techniques</b> <i>Lorenzo Gitto, MD; Sarah Thomas, MD; David Waters, MD</i>
3:15 PM – 3:25 PM	<b>BREAK</b>
3:25 PM – 4:25 PM	<b>Cardiac Sampling and Histopathology</b> <i>Lorenzo Gitto, MD; Sarah Thomas, MD</i>
4:25 PM – 4:45 PM	<b>Genetic and Molecular Studies</b> <i>Gregory Webster, MD</i>
4:45 PM – 5:00 PM	<b>Discussion and Questions</b> <i>All Speakers</i>

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W17 First Look at the Draft Recommendations in the Report of the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation**

**Tuesday, February 14, 2023**

**8:30 AM – 5:00 PM**

**CE Hours: 6.0**

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

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

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

*Chair:*

**Lynn Garcia, JD**

Texas Forensic Science Commission  
Austin, TX

*Co-Chair:*

**Tiffany Roy, JD**

ForensicAid  
West Palm Beach, FL

*Presenters:*

**Nikola Osborne, PhD**

Human Factors Training and Consultancy  
Auckland, New Zealand

**Melissa Taylor, BA**

National Institute of Standards and Technology  
Gaithersburg, MD

**Angela Spessard, MSFS**

Maryland State Police  
Pikesville, MD

**Jarrah Kennedy, MSFS**

Kansas City Police Crime Laboratory  
Kansas City, MO

**Mikalaa Martin, BS**

RTI International  
Greenville, SC

**Hope Zagaria, MSFS**

RTI International  
Alexandria, VA

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

**Knowledge Level Required:** Basic

# WORKSHOPS

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## **W17 First Look at the Draft Recommendations in the Report of the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation**

### **Program:**

- 8:30 AM – 9:00 AM      **Participant & Facilitator Introductions**  
*Melissa Taylor, BA*
- 9:00 AM – 10:30 AM      **Introduction to the NIST/NIJ Expert Working Group Series**  
*Melissa Taylor, BA*
- Introduction to Key Concepts Used Throughout the NIST/NIJ Expert Working Group on Human Factors in Forensic DNA Interpretation Report**  
*Nikola Osborne, PhD; Mikalaa Martin, BS*
- Management and Work Environment**  
*Lynn Garcia, JD; Melissa Taylor, BA*
- 10:30 AM – 10:45 AM      **BREAK**
- 10:45 AM – 12:00 PM      **Interpretation and Technology**  
*Hope Zagaria, MSFS; Angela Spessard, MSFS*
- Quantitative and Qualitative Expressions of DNA Results**  
*Nikola Osborne, PhD; Tiffany Roy, JD*
- 12:00 PM – 1:00 PM      **BREAK**
- 1:00 PM – 3:00 PM      **Reporting and Testimony**  
*Tiffany Roy, JD; Jarrah Kennedy, BS*
- Education, Training, and Professional Credentialling**  
*Lynn Garcia, JD; Angela Spessard, MSFS*
- 3:00 PM – 3:15 PM      **BREAK**
- 3:15 PM – 5:00 PM      **QA/QC**  
*Mikalaa Martin, BS; Melissa Taylor, BA*
- Interpretations Given Proposed Activities**  
*Nikola Osborne, PhD; Jarrah Kennedy, MSFS*
- Final Thoughts**

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

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

**Tuesday, February 14, 2023**

**8:30 AM – 5:00 PM**

**CE Hours: 6.5**

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

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

**Program Description:** This workshop presents an overview of current methods in blunt force skeletal trauma analysis with a hands-on opportunity for attendees to gain a unique experience and to put these methods to practice. Attendees will gain hands-on experience in identifying, analyzing, and interpreting known skeletal trauma, which is a rare occurrence in forensic sciences. They will also have the distinct opportunity to see exactly how the trauma occurred. All cases included in this workshop are experimental cases of blunt force trauma; therefore, attendees will have access to data collected throughout the entire research design. Specifically, beyond the bone itself, they will be able to evaluate fracture timing, high-speed videos to visualize the response during the event, post-test photographs and radiographs of documented injuries, and 3D models to assist in visualizing skeletal trauma and re-creating the traumatic event.

Foundational concepts will be discussed first in a single element situation, then will transition to the complex whole body situation. This workshop is designed for a broad, multidisciplinary audience and the intention is for the participants to work with colleagues in varying fields to expand their experiences and evaluations. Forensic science is inherently multidisciplinary, but trauma analysis in particular requires a variety of experts. Therefore, this opportunity facilitates communication among colleagues and subsequently substantiates the importance of an interdisciplinary approach to trauma analysis. This novel workshop provides attendees with a hands-on experience in identifying and analyzing skeletal trauma from known loading mechanisms to facilitate an increased understanding of the relationship between trauma mechanism and fracture characteristics, ultimately improving interpretations in

*Chair:*

**Angela L. Harden, PhD**  
The Ohio State University  
Columbus, OH

*Co-Chair:*

**John H. Bolte, IV, PhD** The  
Ohio State University  
Columbus, OH

*Presenters:*

**Amanda M. Agnew, PhD**  
The Ohio State University  
Columbus, OH

**Kyra Stull, PhD**  
University of Nevada-Reno  
Reno, NV

**Christopher M. Goden, MA**  
The Ohio State University  
Columbus, OH

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

**Knowledge Level Required:** Intermediate

# WORKSHOPS

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

### **Program:**

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

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

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

**Tuesday, February 14, 2023**

**8:30 AM – 6:00 PM**

**CE Hours: 7.5**

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

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

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

*Chair:*

**Bryan W. Brendley, PhD**  
Methodist University  
Fayetteville, NC

*Co-Chair:*

**David Pauly, MFS**  
Methodist University  
Fayetteville, NC

*Presenter:*

**Steven Downs, DBA**  
Methodist University  
Fayetteville, NC

**Target Audience:** Anthropology, Criminalistics, General

**Knowledge Level Required:** Basic

**Program:**

8:30 AM – 10:30 AM	<b>Overview of the Exposure Triangle</b> <i>David Pauly, MFS</i>
10:30 AM – 11:00 AM	<b>BREAK</b>
11:00 AM – 12:00 PM	<b>Practical Exercise on Taking Various Crime Scene Images with Different Lenses—Normal Perspective, Wide Angle, Zoom, and Macro/Micro</b> <i>Steve Downs, DBA</i>
12:00 PM – 1:00 PM	<b>Exploration of Lighting Techniques</b> <i>Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA</i>
1:00 PM – 2:00 PM	<b>BREAK</b>



# WORKSHOPS

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

### **Program cont.:**

- 2:00 PM – 3:00 PM      **Overview of Photography Outside the Visible Spectrum—Alternate Light Source Photography**  
*David Pauly, MFS*
- 3:00 PM – 3:30 PM      **BREAK**
- 3:30 PM – 4:30 PM      **Practical Exercise on Imaging Forensic Evidence Beyond the Visible Spectrum**  
*Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA*
- 4:30 PM – 5:00 PM      **Overview on Imaging Beyond 700nm in the Infrared Radiation Spectrum**  
*David Pauly, MFS*
- 5:00 PM – 6:00 PM      **Practical Exercise of Imaging Evidence in the IR Spectrum**  
*Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA*

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

## **W20 A Gentle Introduction to the Likelihood Ratio: Basic Ideas, Implementation, Limitations**

**Tuesday, February 14, 2023**

**8:30 AM – 12:00 PM**

**CE Hours: 3.25**

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

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

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

*Chair:*

**Alicia L. Carriquiry, PhD**

CSAFE–Iowa State University

Ames, IA

*Co-Chair:*

**Micael J. Salyards, PhD**

CSAFE–Iowa State University

Ames, IA

*Presenter:*

**Danica M. Ommen, PhD**

CSAFE–Iowa State University

Ames, IA

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

**Knowledge Level Required:** Basic

### **Program:**

8:30 AM – 8:45 AM	<b>Motivating the Application of Quantitative Approaches to Evaluate Science</b> <i>Michael J. Salyards, PhD</i>
8:45 AM – 9:15 AM	<b>A Gentle Introduction to Basic Statistical Ideas: Conditional Probabilities, Bayes Rule, Statistical Models, and Examples</b> <i>Alicia L. Carriquiry, PhD</i>
9:15 AM – 10:00 AM	<b>Formulating Propositions and the Corresponding Likelihood Ratios: Examples from Biological and Trace Disciplines</b> <i>Danica M. Ommen, PhD</i>
10:00 AM – 10:15 AM	<b>BREAK</b>
10:15 AM – 10:45 AM	<b>The Special Case of Pattern Comparison Disciplines and the Score-Based Likelihood Ratio (SLR)</b> <i>Alicia L. Carriquiry, PhD</i>
10:45 AM – 11:15 AM	<b>FRStats as an Example of SLR in Practice</b> <i>Michael J. Salyards, PhD</i>
11:15 AM – 11:45 AM	<b>The ENSFI Qualitative LR (QLR) and Other Odds and Ends</b> <i>Danica M. Ommen, PhD</i>
11:45 AM – 12:00 PM	<b>Discussion and Questions</b>

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W21      Implementing FIGG: How to put Forensic Investigative Genetic Genealogy Into Practice (Without Messing it up for Everyone Else)**

**Tuesday, February 14, 2023**

**9:00 AM – 12:30 PM**

**CE Hours: 3.0**

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

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

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

*Chair:*

**Ray A. Wickenheiser, DPS**

New York State Police Crime Lab System  
Albany, NY

*Presenters:*

**Connie Bormans, PhD**

Gene by Gene  
Houston, TX

**Swathi A. Kumar, PhD**

GEDmatch  
San Diego, CA

**Steven Smugeresky, BA**

Montgomery County Police Department  
Gaitersburg, MD

**Mandi S. Van Buren, MPharm**

Kern Regional Crime Laboratory  
Bakersfield, CA

**Target Audience:** Criminalistics, General, Jurisprudence

**Knowledge Level Required:** Basic

# WORKSHOPS

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## **W21      Implementing FIGG: How to put Forensic Investigative Genetic Genealogy Into Practice (Without Messing it up for Everyone Else)**

### **Program:**

- |                     |   |
|---------------------|---|
| 9:00 AM – 9:10 AM   | <b>Welcome and Introductions to Speakers</b><br><i>Ray A. Wickenheiser, PhD</i>   |
| 9:10 AM – 9:50 AM   | <b>Standards and Policy From the FIGG Steering Committee</b><br><i>Ray A. Wickenheiser, PhD</i>                                   |
| 9:50 AM – 10:35 AM  | <b>FIGG Technology Comparisons: A Breakdown of all the Options, and When to Use What</b><br><i>Connie Bormans, PhD</i>            |
| 10:35 AM – 10:50 AM | <b>BREAK</b>  |
| 10:50 AM – 11:30 AM | <b>FIGG Database Hygiene: Bridging the Gap Between External Policy &amp; Internal Practice</b><br><i>Swathi A. Kumar, PhD</i>     |
| 11:30 AM – 12:10 PM | <b>Preparing for Implementation: What to Think About and How to Bring on FIGG</b><br><i>Mandi S. Van Buren, MPharm</i>            |
| 12:10 AM – 12:30 PM | <b>Learning FIGG: Advice From Law Enforcement on How to Learn Investigative Genetic Genealogy</b><br><i>Steven Smugeresky, BA</i> |

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W22     An Introduction to Document Security**

**Tuesday, February 14, 2023**

**1:00 PM – 4:30 PM**

**CE Hours: 3.0**

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

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

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

*Chair:*

**Carolyn Bayer-Broring, MFS**

Immigration & Customs Enforcement

Derwood, MD

*Co-Chair:*

**Elaine X. Wooton, MFS**

Homeland Security Investigations

McLean, VA

**Target Audience:** Criminalistics, General, Jurisprudence, Questioned Documents

**Knowledge Level Required:** Basic

**Program:**

1:00 PM – 1:15 PM	<b>Introduction of Speakers and Overall Topic</b> <i>Carolyn Bayer-Broring, MFS; Elaine X. Wooton, MFS</i>
1:15 PM – 2:00 PM	<b>Security Substrates</b> <i>Carolyn Bayer-Broring, MFS</i>
2:00 PM – 2:30 PM	<b>Optically Variable Features</b> <i>Elaine X. Wooton, MFS</i>
2:30 PM – 2:45 PM	<b>BREAK</b>
2:45 PM – 3:30 PM	<b>Security Printing</b> <i>Carolyn Bayer-Broring, MFS</i>
3:30 PM – 4:00 PM	<b>Digital Elements</b> <i>Elaine X. Wooton, MFS</i>
4:00 PM – 4:30 PM	<b>Design &amp; Supply Chain Considerations</b> <i>Elaine X. Wooton, MFS</i>

# WORKSHOPS

*Pre-Registration Required by Jan. 30*

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

**Tuesday, February 14, 2023**

**8:30 AM – 12:30 PM**

**CE Hours: 3.75**

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

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

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

**Thomas W. Vastrick, BSc**  
Apopka, FL

**Co-Chair:**  
**Kevin P. Kulbacki, MSFS**  
KDX Forensic Consulting, LLC  
Chicago, IL

**Target Audience:** Questioned Documents

**Knowledge Level Required:** Basic

### **Program:**

8:30 AM – 9:00 AM	<b>Overview of Challenge</b> <i>Thomas W. Vastrick, BSc</i>
9:00 AM – 10:00 AM	<b>Recommendations and Bases</b> <i>Thomas W. Vastrick, BSc</i>
10:00 AM – 10:20 AM	<b>BREAK</b>
10:20 AM – 12:00 PM	<b>Writing the Report Principles</b> <i>Thomas W. Vastrick, BSc; Kevin P. Kulbacki, MSFS</i>
12:00 PM – 12:30 PM	<b>Discussion</b> <i>Thomas W. Vastrick, BSc; Kevin P. Kulbacki, MSFS</i>

# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

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

**Tuesday, February 14, 2023**

**1:30 PM – 5:00 PM**

**CE Hours: 3.75**

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

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

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

*Chair:*

**Linton Mohammed, PhD**  
Forensic Science Consultants, Inc.  
Poway, CA

*Co-Chair:*

**Pamela A.W. King, JD**  
State of Minnesota  
Rochester, MN

*Presenters:*

**Mary C. McKiel, PhD**  
AAFS Standards Board  
Arnold, MD

**Lucy A. Davis, BHS**  
LDH Consultants, LLC  
Pikeville, KY

**Kris Cano, MA**  
Scottsdale Police Department Crime Laboratory  
Scottsdale, AZ

**Pamela Sale, BS**  
ANSI National Accreditation Board  
Washington, DC

**Ray A. Wickenheiser, DPS**  
New York State Police Crime Lab System  
Albany, NY

**Terri Rosenblatt, JD**  
New York County District Attorney's Office  
Albany, NY

**Raymond Valerio, JD**  
Queens District Attorney  
Kew Gardens, NY

**Stephanie Domitrovich, PhD**  
Senior Judge of Pennsylvania  
Erie, PA

**Target Audience:** All Sections

**Knowledge Level Required:** Basic

# WORKSHOPS

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

### **Program:**

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



# WORKSHOPS

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*Pre-Registration Required by Jan. 30*

## **W26 Taming the Wild West of Workflows for Opioids, Emerging and Controversial Drug Threats**

**Tuesday, February 14, 2023**

**1:30 PM – 5:00 PM**

**CE Hours: 3.25**

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

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

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

*Chair:*

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

*Co-Chair:*

**Michael F. Rieders, PhD**  
NMS Labs  
Horsham, PA

*Presenters:*

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

**Reta Newman, MA**  
Pinellas County Forensic Laboratory  
Largo, FL

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

**Brianna Peterson, PhD**  
NMS Labs  
Castle Rock, CO

**Barry K. Logan, PhD**  
CFSRE  
Willow Grove, PA

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

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

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

**Knowledge Level Required:** Basic

# WORKSHOPS

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## **W26 Taming the Wild West of Workflows for Opioids, Emerging and Controversial Drug Threats**

### **Program:**

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

# NATIONAL INSTITUTE OF JUSTICE

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## Forensic Science Research and Development Symposium

The National Institute of Justice (NIJ) Forensic Science Research and Development (R&D) Symposium is an open meeting 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) meeting 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: <http://ow.ly/Z9yc50LWOAb>.

**Tuesday, February 14, 2023**

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The podium presentations will take place from 8:30 AM to 5:00 PM. A Q&A session for each presenter will directly follow their presentation.

8:30 AM - 8:40 AM      **Welcome and Opening Remarks**  
*Lucas Zarwell, Office of Investigative and Forensic Sciences, NIJ*

### **Session I – Impression and Pattern Evidence/Trace Evidence**

*Moderated by NIJ Program Manager Gregory Dutton*

8:40 AM - 9:05 AM      **Applying the NIST Footwear Impression Comparison System to Comparisons Involving Realistic Crime Scene Impressions**  
*Steve Lund, National Institute of Standards and Technology (NIST)*

9:05 AM - 9:30 AM      **Novel Ambient Oxidation Trends in Fingerprint Aging Discovered by High-Resolution Mass Spectrometry**  
*Andrew E. Paulson, Iowa State University*

9:30 AM - 9:55 AM      **Surface-Enhanced Raman Spectroscopy Enables Highly Accurate Identification of Different Brands, Types, and Colors of Hair Dyes**  
*Dmitry Kurovski, Texas A&M University*

9:55 AM - 10:20 AM      **Application of Particle Correlated Raman Spectroscopy (PCRS) for the Forensic Examination of Soils**  
*Brooke W. Kammrath, University of New Haven*

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      **GIS Application for Building a Nationally Representative Forensic Taphonomy Database**  
*Katherine Weisensee, Clemson University*

11:00 AM - 11:25 AM      **Germ-Line Transformation of Forensically Important Flies**  
*Amber MacInnis, Florida International University*

11:25 AM - 11:50 AM      **Bone Trauma and Thermal Alteration of Human Remains**  
*Giovanna M. Vidoli, University of Tennessee, Knoxville*

11:50 AM - 12:15 PM      **Development of the Forensic Anthropology Skeletal Trauma (FAST) Database**  
*Angela L. Harden, The Ohio State University*

12:15 PM - 1:25 PM      **Lunch Break - On Your Own**

# NATIONAL INSTITUTE OF JUSTICE

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## Session III – Seized Drugs and Toxicology

Moderated by NIJ Program Manager, Frances Scott

- 1:25 PM - 1:50 PM **Detectability of  $\Delta$ 10-THC's Chiral Analogs in Urine by Six Commercially Available Homogeneous Immunoassays**  
*Carl E. Wolf, Virginia Commonwealth University*
- 1:50 PM - 2:15 PM **Assessment of the Contribution to Drug-Impaired Driving from Emerging and Undertested Drugs**  
*Amanda L.A. Mohr, Center for Forensic Science Research and Education*
- 2:15 PM - 2:40 PM **A Molecular Networking Approach to Processing Untargeted High Resolution Mass Spectrometry Data in Forensic Toxicology**  
*Heather Barkholtz, University of Wisconsin–Madison*
- 2:40 PM - 3:05 PM **High-Resolution Mass Spectrometry Screening in Forensic Toxicology: Cost Benefit Analysis**  
*Sarah Kerrigan, Houston Forensic Science Center*  
*Jessica Ayala, Sam Houston State University*
- 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 **Validation of a Confirmatory Proteomic Mass Spectrometry Body Fluid Assay for Use in Publicly Funded Forensic Laboratories**  
*Erin Butler, New York City Office of the Chief Medical Examiner*
- 3:45 PM - 4:10 PM **Biological Sample Analysis Using Prediction Modeling for Early Mixture Detection**  
*Tracey Dawson Green, Virginia Commonwealth University*
- 4:10 PM - 4:35 PM **DNA Analysis Findings from Male Sexual Assault Victims: Multidisciplinary Practice Implications**  
*Julie L. Valentine, Brigham Young University*
- 4:35 PM - 5:00 PM **Selectively Analyzing and Interpreting DNA from Multiple Donors with a Full Single-cell Strategy**  
*Nidhi Sheth, Rutgers University–Camden*

# NATIONAL INSTITUTE OF JUSTICE

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## Poster Session

The poster presentations will be from 5:00 PM to 6:30 PM. The poster room doors will remain open until 8:00 PM for self-guided tours. For those who wish to access the posters virtually, more information can be found here: <http://ow.ly/Z9yc50LWOAb>.

### **A Universal Method for the Detection of Organic and Inorganic Gunshot Residue Based on Fast Fluorescence Mapping and Raman Spectroscopic Identification**

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

### **Development of an Empirical Fingerprint Aging Model Using Fingerprints Analyzed with Laser Desorption/Ionization Mass Spectrometry**

*Daphne R. Patten, Iowa State University*

### **Revisiting the Set Value for the Minimum Drip Stain Size**

*Garam Lee, Boston University*

### **Extraction and Quantification of Fentanyl and Metabolites from Complex Biological Matrices to Support Medicolegal Death Investigations**

*Joseph Cox, Florida International University*

### **Utilizing eDNA from Four Biological Taxa Associated with Geologic Evidence for Sample-to-Sample Comparisons and Study Site Separation**

*Teresa M. Tiedge, North Carolina State University*

### **Analysis of Less Volatile Components in Ignitable Liquids by Direct Analysis in Real Time Mass Spectrometry and Versatile Sampling Strategy**

*Mengliang Zhang, Middle Tennessee State University*

### **Development of an Interactive Database of Contemporary Material Properties for Computer Fire Modeling**

*Mark B. McKinnon, Underwriters Laboratories Fire Safety Research Institute*

### **Rapid Association of Commingled Remains by their Chemical Profile**

*Kristen M. Livingston, University of Central Florida*

### **Personal Identification Using Part-to-Part Comparison of 3D Lumbar Geometry Using Antemortem and Postmortem Computed Tomography**

*Summer J. Decker, University of South Florida Health & Tampa General Hospital*

### **You Are What You Eat! Identification of the Matrices on Which Necrophagous Insects Feed Using Direct Analysis in Real Time–High Resolution Mass Spectrometry (DART–HRMS) and Chemometrics**

*Rabi A. Musah, University at Albany – State University of New York*

### **Developing Subadult Sex Estimation Standards Using Adult Morphological Sex Traits and an Ontogenetic Approach**

*Stephanie J. Cole, University of Nevada, Reno*

### **An Osteometric Approach to Separating Commingled Pelvic and Foot Joints**

*Helen Litavec, Binghamton University*

### **Combining Surface-enhanced Raman Spectroscopy (SERS) and Mass Spectrometry Techniques to Increase Sensitivity and Specificity in Toxicological Drug Analysis in Blood Plasma**

*Vitoria Simas, Indiana University–Purdue University Indianapolis*

# NATIONAL INSTITUTE OF JUSTICE

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## Poster Session cont.

### **Getting into the Weeds—A Combined Ambient Mass Spectrometric and Chemometric Approach for Differentiating Hemp and Marijuana Varieties of *Cannabis sativa***

*Rabi A. Musah, University at Albany – State University of New York*

### **Tracking and Disseminating Data on Novel Psychoactive Substances (NPS) through NPS Discovery's Drug Early Warning System**

*Alex J. Krotulski, Center for Forensic Science Research and Education*

### **Biomarkers of Cannabis Exposure in Exhaled Breath Condensate and Oral Fluid**

*Anthony P. DeCaprio, Florida International University*

### **Validation of a LC-DAD Method with Optional ESI/TOFMS Detection for the Accurate Measurement of $\Delta^9$ -THC and $\Delta^9$ -THCA Among Twenty Cannabinoids in Cannabis**

*Liguo Song, Western Illinois University*

### **Sample Homogenization, Extraction, and Clean Up Procedures at NIST for the Determination of Total $\Delta^9$ -THC in Hemp-derived Finished Products**

*Walter Brent Wilson, National Institute of Standards and Technology (NIST)*

### **Improved Nucleic Acid Recovery from Trace Samples Using Affinity Purification**

*Brian Davis, GE Research*

### **Development of a Probe Capture Next-Generation Sequencing Assay for Analysis of the Mitochondrial Genome and Nuclear STR and SNP Markers**

*Gunmeet Kaur Bali, 10x Genomics*

### **Single-cell Likelihood Ratios are Highly Informative and Robust Across Multifarious Mixture Complexities**

*Catherine M. Grgicak, Rutgers University–Camden*

### **Adaptation, Optimization, and Validation of a Semi-automated DNase I-based Differential Extraction Procedure on the Beckman Coulter Biomek® NXP Automated Workstation**

*Ashley M. Cooley | Virginia Department of Forensic Science*

### **Paper-based Chemiresistive Biosensor Array for Rapid, On-site Identification of Multiple Body Fluids at a Crime Scene**

*Samriddha Dutta, University of California, Riverside*

### **Sex-based Targeted Recovery of Cells in a Heterogeneous Mixture: Separating Male and Female Like-cells**

*Amber C. W. Vandepoele, Syracuse University*

### **A Fully Integrated Microfluidic Tool for Forensic Epigenetic Sample Preparation**

*Rachelle Turiello, University of Virginia*

### **Quality Control Procedures Required for the Generation of Forensic Quality Mitogenome Reference Data**

*Kimberly Sturk-Andreaggi, Armed Forces Medical Examiner System – Armed Forces DNA Identification Laboratory (AFMES-AFDIL)/SNA International*

# NIJ FTCOE PUBLIC FORUM

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## Research to Impact Forum: Anything Goes!

### Friday

February 17, 2023

8:00 AM – 12:00 PM

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Development and subsequent adoption of technology is critical to addressing forensic community needs and improving just outcomes. However, researchers and practitioner end users operate in realities that make transition of research to practice challenging. The National Institute of Justice's Forensic Laboratory Needs Working Group, in partnership with the Forensic Technology Center of Excellence, created this effort to improve stakeholder alignment and enhance success of technology transition. The output of this study is a living document that will introduce the concept of the forensic innovation ecosystem and its players, share researcher and practitioner perspectives, and identify short and long term priorities to improve transition.

This public forum will inform participants on the goals, methodology, and initial insights from this study, and enable participants to provide input on approaches. Have an idea for lowering barriers, overcoming obstacles, or enhancing researcher-practitioner relationships? There will be four one-hour sessions available to attend. Drop by and add your thoughts—anything goes! Feel free to stay as long as you like.

*Moderator:*

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

FTCOE Project Director

Principal Scientist

RTI International

Research Triangle Park, NC

*Co-Moderator:*

**Rebecca Shute**

Innovation Advisor

RTI International

Research Triangle Park, NC

8:00 AM	-	9:00 AM	<b>Input Session One</b>
9:00 am	-	10:00 AM	<b>Input Session Two</b>
10:00 AM	-	11:00 AM	<b>Input Session Three</b>
11:00 AM	-	12:00 PM	<b>Input Session Four</b>



# FORENSIC SCIENCES RESEARCH

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PSYCHIATRY & BEHAVIORAL SCIENCE

PATHOLOGY / BIOLOGY

DIGITAL & MULTIMEDIA SCIENCES

ENGINEERING & APPLIED SCIENCES

GENERAL

# ANTHROPOLOGY

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## Wednesday

### Poster Session

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- 11:30 AM – 1:00 PM    **A1**    **The Applications of Confocal Laser Scanning Microscopy for Imaging Burned Remains**  
*Shelby Garza, MA\**  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **A2**    **A Test of Interrater Reliability Using the Refined Classification System for Thermally Damaged Human Remains by Body Segment**  
*Chelsey Juarez, PhD\**; *Elayne Pope, PhD*; *Alison Galloway, PhD*
- 11:30 AM – 1:00 PM    **A3**    **A Comparison of Patterns of Dismemberment Between Rural and Urban Areas in Northern California**  
*Lillian Antonelli, BS\**; *Shelby Hard, BA\**; *Sadie Friend, BS*; *Devin Adcox, BS*; *Eric Bartelink, PhD*; *Shannon Clinkinbeard, MA*; *Ashley Kendell, PhD*; *Colleen Milligan, PhD*; *P. Willey, PhD*
- 11:30 AM – 1:00 PM    **A4**    **Establishing a Skeletal Atlas of Elder Abuse: An Expanded Study of Fracture Patterns in Documented Cases**  
*Katelyn Bolhofner, PhD\**; *Laura Fulginiti, PhD*; *Jane Buikstra, PhD*
- 11:30 AM – 1:00 PM    **A5**    **Trauma Interpretation: A Case Study in Bone Healing**  
*Kerianne Armelli, PhD\**; *Megan Carroll, BS*; *Jane Harris, PhD*
- 11:30 AM – 1:00 PM    **A6**    **Investigation of Gunshot Homicides in the New Mexico Decedent Image Database**  
*Delaney Edwards, BA\**; *Mariyam Isa, PhD*
- 11:30 AM – 1:00 PM    **A7**    **A Proposal for Cut Marks Classification and Analysis: Serrated vs. Non-Serrated Knives**  
*Giada Steiger, MSc\**; *Matteo Borrini, PhD\**
- 11:30 AM – 1:00 PM    **A8**    **Analyzing Chopping/Hacking Cut Mark Characteristics on Bone: Implications for Forensic Analysis**  
*Kelly McGehee, MA\**; *John Schultz, PhD*; *Sarah Freidline, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **A9**    **Assessing Minimum Kerf Width Measurement Error**  
*Alexis VanBaarle, BA\**; *Heather Garvin, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **A10**    **The Relationship Between Skull Trauma and Demographics in Contemporary New Mexicans**  
*Elise Adams, BA\**; *Jesse Goliath, PhD*
- 11:30 AM – 1:00 PM    **A11**    **Postmortem Interval Estimation and the Recognition of Bone Trauma Through the Analysis of Physicochemical Changes Produced by Bone Diagenesis Over Forensic Timescales**  
*Caley Mein, MRes\**; *Jennifer Jones, PhD*; *Catherine Tennick, PhD*; *Anna Williams, PhD*
- 11:30 AM – 1:00 PM    **A12**    **Forensic Anthropological Studies Published From India During 2011–2022: A Literature Review and Meta-Analysis**  
*Jagmahender Sehrawat, PhD\**
- 11:30 AM – 1:00 PM    **A13**    **The Reliability and Utility of Surgical Materials in Scientific Identification Via Comparative Medical Radiography**  
*Rose Leach, MA\**; *Jered Cornelison, PhD*; *Christine Pink, PhD*; *Carolyn Isaac, PhD*

# ANTHROPOLOGY

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- 11:30 AM – 1:00 PM    **A14**    **A Comparison of the Gross and Radiographic Appearance of Classic Metaphyseal Lesions**  
*Miriam Soto Martinez, PhD\**; *Julie Fleischman, PhD*; *Jason Wiersema, PhD*
- 11:30 AM – 1:00 PM    **A15**    **The Application of Craniofacial Superimposition in a Case of Death in Migratory Transit on the Coast of Granada**  
*Rubén Martos, PhD\**; *Fernando Navarro, PhD*; *Inmaculada Alemán*
- 11:30 AM – 1:00 PM    **A16**    **A Validation of the FSS Method for Forensic Frontal Sinus Identification Using a United States Sample**  
*Patricia Avent, BA\**; *Lauren Butaric, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **A17**    **Cobb Angle Estimation in a Deceased Population**  
*Rachel Meach, BS\**; *Ellen Fricano, PhD*; *Camryn Shirley*; *Alicia Grosso, PhD*
- 11:30 AM – 1:00 PM    **A18**    **Inter- and Intra- 3D Modeling Reliability From Computed Tomographic Imaging of the Lumbar Vertebrae**  
*Summer Decker, PhD\**; *Daniel Martin, MD*; *Louis Leon, MD*; *Jonathan Ford, PhD\**
- 11:30 AM – 1:00 PM    **A19**    **Investigating Forensic Anthropologists' Training and Understanding of Evolutionary Theory**  
*An-Di Yim, PhD\**; *Michala Stock, PhD*; *Allysha Winburn, PhD*
- 11:30 AM – 1:00 PM    **A20**    **The Regression Analyses of Nasal Measurements for Forensic Facial Reconstruction: From Juvenile to Adult**  
*Dong-Ho Kim, PhD\**; *Sang-Seob Lee, DPhil*; *Yi-Suk Kim, MD, PhD*; *Dai-Soon Kwak, PhD*; *U-Young Lee, MD, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **A21**    **The Significance of Facial Soft Tissue Thickness in Craniofacial Reconstruction: A Systematic Review and Meta-Analysis**  
*Jagmahender Sehrawat, PhD\**; *Bhavna Ahlawat, MSc*
- 11:30 AM – 1:00 PM    **A22**    **Sixteen Years of Forensic Anthropology at the Harris County Institute of Forensic Sciences (HCIFS): Reflections and Looking Forward**  
*Julie Fleischman, PhD\**; *Jason Wiersema, PhD*; *Miriam Soto Martinez, PhD*
- 11:30 AM – 1:00 PM    **A23**    **Forensic Anthropology Casework at the St. Louis County Office of the Medical Examiner**  
*Lindsay Trammell, PhD\**
- 11:30 AM – 1:00 PM    **A24**    **Research Needs vs. Publication Trends in Forensic Anthropology**  
*Mariyam Isa, PhD\**; *Amy Michael, PhD\**; *Catherine Wainer, BA*
- 11:30 AM – 1:00 PM    **A25**    **A Postdoctoral Forensic Anthropology Fellowship in the Medical Examiner Setting: A Vision for the Future**  
*Jason Wiersema, PhD\**; *Miriam Soto Martinez, PhD*; *Julie Fleischman, PhD*; *Luis Sanchez, MD*
- 11:30 AM – 1:00 PM    **A26**    **A Technical Note on Recovery and Processing of Burned Human Remains**  
*Hayden McKee-Zech, MSc\**; *Sara Fatula, MA*; *Giovanna Vidoli, PhD*; *Joanne Devlin, PhD*

# ANTHROPOLOGY

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## Thursday

### Beyond the Science: The Value of Anthropological Forensics

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Moderator: Krista Bennett

- 8:30 AM – 8:45 AM      **A27**      **The Role of Anthropologists in the Identification Process Across Medicolegal Jurisdictions**  
*Ginesse Listi, PhD\**; *Teresa Wilson, PhD*; *Emily Michon, MA*; *Sophia Reck, MA*; *Krista Bennett, MA*
- 8:45 AM – 9:00 AM      **A28**      **Applying A Four-Field Approach to Forensic Anthropology Casework, Capacity-Building, and Consultation**  
*Jaymelee Kim, PhD\**; *Lucia Elgerud, PhD*; *Megan Moore, PhD*
- 9:00 AM – 9:15 AM      **A29**      **The Evolution of a Holistic Anthropological Approach to Personal Identification at the Pima County Office of the Medical Examiner**  
*Jennifer Vollner, PhD\**; *Bruce Anderson, PhD*; *Caitlin Vogelsberg, PhD*; *Robin Reineke, PhD*; *Mirza Monterroso, MA*
- 9:15 AM – 9:30 AM      **A30**      **The Anthropology of Forensic Identification: Four-Field Methods Used by the Louisiana State University (LSU) Forensic Anthropology and Computer Enhancement Services (FACES) Laboratory**  
*Sophia Reck, MA\**; *Krista Bennett, MA*; *Teresa Wilson, PhD*; *Ginesse Listi, PhD*; *Emily Michon, MA*
- 9:30 AM – 9:45 AM      **A31**      **Identification Investigations: A Collaborative Approach to the Resolution of Long-Term Unidentified Persons Cases at the New York City Office of Chief Medical Examiner**  
*Angela Soler, PhD\**; *Justin Goldstein, MA*; *Aden Naka, MSc*
- 9:45 AM – 10:00 AM      **A32**      **Beyond the Science: The Value of Anthropological Forensics Discussion**  
*Ginesse Listi, PhD\**; *Emily Michon, MA*; *Sophia Reck, MA*; *Krista Bennett, MA*
- 10:00 AM – 10:15 AM      **BREAK**

### The Fate of Postmortem Remains: Taphonomy and Determining the Postmortem Interval

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Moderator: Katherine Pope

Co-Moderator: Christopher Goden

- 10:15 AM – 10:30 AM      **A33**      **To Scavenge or Not to Scavenge: Rethinking Patterns of Scavenging Behaviors in the Western United States**  
*Cheyenne Collins, MA\**  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 10:30 AM – 10:45 AM      **A34**      **Scavenging in a Wetland Environment: Documentation of Vulture Scavenging of Fully and Partially Submerged Human Remains**  
*Kelsea Hentschel-Fey, MA\**; *Tuesday Frasier, MS*; *Kara DiComo, BA*; *Gennifer Goad, MA*
- 10:45 AM – 11:00 AM      **A35**      **Estimating Postmortem Submersion Interval: Implications for Varied Water Conditions and Skin Tones**  
*Ibukunoluwa Olowe, MSc\**; *Anna Williams, PhD*

# ANTHROPOLOGY

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11:00 AM – 11:15 AM	<b>A36</b>	<b>Assessing Patterns of Moisture Content in Decomposing, Desiccated, and Mummified Tissue in the Southeastern United States</b> <i>Christine Bailey, MA*</i> ; Autumn Lennartz, MA; Maggie Klemm, BS; Cameron Privette, BS; Carter Unger, BS; Rebecca George, PhD
11:15 AM – 11:30 AM	<b>A37</b>	<b>The Metabolomics-Based Estimation of Postmortem Interval From Bones for Forensic Applications</b> <i>Andrea Bonicelli, PhD*</i> ; Noemi Procopio, PhD
11:30 AM – 11:45 AM	<b>A38</b>	<b>The Impact of Fat Mass on Decomposition Rate and Postmortem Interval Estimation</b> <i>Emma Giacomello, MA*</i> ; Michelle Hamilton, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)
11:45 AM – 1:00 PM		<b>BREAK</b>

## Trauma Assessment: Timing, Fractography, and Thermal Damage

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Moderator: Veronica Keyes

Co-Moderator: Lauren Pharr

1:00 PM – 1:15 PM	<b>A39</b>	<b>A Preliminary Investigation of Fractographic Method Accuracy in Determining Fracture Propagation Direction in Human Tibiae</b> <i>Christopher Goden, MA*</i> ; Amanda Agnew, PhD; Yun-Seok Kang, PhD; Kyra Stull, PhD; Angela Harden, PhD
1:15 PM – 1:30 PM	<b>A40</b>	<b>An Examination of Strain Mode at Fracture in Experimentally Loaded Human Tibiae</b> <i>Angela Harden, PhD*</i> ; Yun-Seok Kang, PhD; John Bolte, PhD; Kyra Stull, PhD; Amanda Agnew, PhD
1:30 PM – 1:45 PM	<b>A41</b>	<b>An Evaluation of Blunt Force Trauma Mechanism Interpretations Inferred From Skeletal Fracture Morphology and Patterning</b> <i>Donna Boyd, PhD*</i> ; Victoria Pate
1:45 PM – 2:00 PM	<b>A42</b>	<b>The Application of Forensic Fractography to High-Velocity Projectile Trauma in Long Bones: Relationships to Velocity and Caliber</b> <i>Devin Adcox, BS*</i> ; Ashley Kendall, PhD; Eric Bartelink, PhD; Hugh Berryman, PhD
2:00 PM – 2:15 PM	<b>A43</b>	<b>The Microscopic Characteristics of Peri- and Postmortem Fracture Surfaces</b> <i>Jessica Skinner, PhD*</i> ; Natalie Langley, PhD; Yuktha Shanavas, BS; Brian Waletzki, BS; Robert Brown, BS; Jim Herrick, MS; Peter Goguen; Loukham Shyamsunder, PhD; Subramaniam Rajan, PhD
2:15 PM – 2:30 PM	<b>A44</b>	<b>Distinguishing Between Peri- and Postmortem Fractures to Bone in the Sonoran Desert</b> <i>Marlen Juarez Lopez, BS*</i> ; Kaitlyn Fulp, MA; Katelyn Bolhofner, PhD
2:30 PM – 2:45 PM	<b>A45</b>	<b>The Thermal Damage Analysis Resulting From a Controlled Burn</b> <i>Rebecca George, PhD*</i> ; Nicholas Passalacqua, PhD; Darren Solomon, MS; David Schauble, MS
2:45 PM – 3:00 PM		<b>BREAK</b>

# ANTHROPOLOGY

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## Isotopes and Commingled Remains: Chemistry at Work in Forensic Anthropology

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Moderator: Rebecca George

Co-Moderator: Saskia Ammer

- 3:00 PM – 3:15 PM     **A46**     **Reference Materials for Stable Isotope Analysis of Bone: Current Availability and Needs**  
*Julianne Sarancha, MS\**; *Gwyneth Gordon, PhD*  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 3:15 PM – 3:30 PM     **A47**     **W.E.I.R.D. Water: Rethinking the Bias in Our Forensic Isotopic Provenancing Methods**  
*Taylor Lambrigger, MA\**  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 3:30 PM – 3:45 PM     **A48**     **The Construction of a Bioavailable Strontium Isoscape for South Korea and its Forensic Application**  
*Seongshin Gwak, PhD\**; *Byeongyeol Song, PhD*; *Yuran Lee, PhD*; *Dongkye Lee, PhD*;  
*Jisook Min, PhD*; *Nam-Kyu Park, PhD*
- 3:45 PM – 4:00 PM     **A49**     **The Rapid Association of Commingled Remains**  
*Kristen Livingston, BS\**; *Matthieu Baudelet, PhD*; *Jonathan Bethard, PhD*;  
*Katie Zejdlik-Passalacqua, PhD*
- 4:00 PM – 4:15 PM     **BREAK**

## 75 Years of Forensic Science: Standards, Ethics, and Moving the Field Forward

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Moderator: Donna Boyd

Co-Moderator: Yangseun Jeong

- 4:15 PM – 4:30 PM     **A50**     **An Update on Standards Development Activities Related to Forensic Anthropology**  
*Wendy McQuade, PhD\**; *Julie Fleischman, PhD\**
- 4:30 PM – 4:45 PM     **A51**     **What Makes a “Good” Forensic Anthropologist?**  
*Allysha Winburn, PhD\**; *Meredith Marten, PhD, MPH*; *Benjamin Burgen, PhD*;  
*Spencer Seymour, MA*; *Taylor Walkup, MA*
- 4:45 PM – 5:00 PM     **A52**     **Repatriation Beyond Native American Graves Protection and Repatriation Act (NAGPRA): The Ethics of America’s Osteology Collections**  
*Lyndsey Hornagold, MS\**
- 5:00 PM – 5:15 PM     **A53**     **Data on Methods Usage in Forensic Anthropology Casework From 1972–2022 Using the Forensic Anthropology Database for Assessing Methods Accuracy (FADAMA)**  
*Chelsey Juarez, PhD\**; *Cris Hughes, PhD*; *An-Di Yim, PhD*

## Poster Session

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- 11:30 AM – 1:00 PM     **A54**     **WITHDRAWN**
- 11:30 AM – 1:00 PM     **A55**     **Evaluating Aspartic Acid Racemization as a Novel Technique for Forensic Age Determination**  
*Bhavna Ahlawat, MSc*; *Jagmahender Sehwat, PhD\**
- 11:30 AM – 1:00 PM     **A56**     **The Impact of Pelvic Anomalies on Sacral Joint Surface Aging**  
*Krista Bennett, MA\**  
(FSF Emerging Forensic Scientist Award Poster Presentation)

# ANTHROPOLOGY

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- 11:30 AM – 1:00 PM     **A57**     **The Investigation of the Ectocranial Squamosal Suture to Estimate Age at Death**  
*Navit Nachmias, BS\**; *Steven Lautzenheiser, PhD*; *Joanne Devlin, PhD*
- 11:30 AM – 1:00 PM     **A58**     **Evaluating the Effects and Timing of Hydrochloric Acid (HCl, 38%) Destruction on Porcine Versus Human Dentition**  
*Tammy Bracewell, PhD\**; *Christine Jones, PhD*
- 11:30 AM – 1:00 PM     **A59**     **Testing the Accuracy of Three Dental Aging Methods**  
*Maggie Breuer, BA\**; *Kaitlyn McKenna, BA*; *Jessica Burden, BA*; *Lauren Young, BA*; *Tim Griffin*
- 11:30 AM – 1:00 PM     **A60**     **Evaluating Sacral Metrics for Sex Estimation**  
*Alexandra Kiales, PhD*; *Kate Lesciotto, JD, PhD\**
- 11:30 AM – 1:00 PM     **A61**     **A Content Analysis of Sex Estimation Research in the *Journal of Forensic Sciences* Between 2000 and 2021**  
*Morgan Ferrell, MA\**; *John Schultz, PhD*; *Donovan Adams, PhD*
- 11:30 AM – 1:00 PM     **A62**     **Sex Estimation Using Interlandmark Distances of the Zygomatics**  
*Keegan Beane, BA\**  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM     **A63**     **Machine Learning and Discriminant Function Analysis in the Formulation of Generic Models for Sex Prediction Using Patella Measurements**  
*Mubarak Bidmos, PhD\**; *Oladiran Olateju, PhD*; *Tawsifur Rahman, MS*; *Muhammad E.H. Chowdhury, PhD*
- 11:30 AM – 1:00 PM     **A64**     **Analyzing Interpretative Approaches in FORDISC® to Improve Sex Estimation Accuracy**  
*Arielle Reich, MA\**; *Cris Hughes, PhD*; *Heather Garvin, PhD*; *Patricia Avent, BA*
- 11:30 AM – 1:00 PM     **A65**     **Determining Sexual Dimorphism From Mastoid Triangle Measurements in a South Indian Population: A Computed Tomography (CT) Scan-Based Study**  
*Siddhartha Das, MBBS, MD\**
- 11:30 AM – 1:00 PM     **A66**     **A Critical Appraisal of Standardization and Integration of Forensic Anthropological Techniques**  
*Shubham Thakur, MSc*; *Jagmahender Sehwat, PhD\**
- 11:30 AM – 1:00 PM     **A67**     **Differences in Self-Reported Versus Measured Stature**  
*Kristina Perez, MS\**; *Samantha Esposito, MS*; *Jennifer Sare, MA*; *Katherine Wander, MPH, PhD*
- 11:30 AM – 1:00 PM     **A68**     **An Osteometric Approach to Separating Commingled Pelvic and Foot Joints**  
*Helen Brandt-Litavec, MS\**
- 11:30 AM – 1:00 PM     **A69**     **An Automated Deep-Learning Approach to the Segmentation of Vascular Pore Systems and Osteocyte Lacunae in Virtual and Traditional Histologic Datasets**  
*Medhat Hassan, BSc*; *Joshua Taylor, BSc*; *Janna Andronowski, PhD\**
- 11:30 AM – 1:00 PM     **A70**     **When Bone Lights Up: A Novel Way of Labeling Proteins and Cells and Its Potential Uses**  
*Ashley Smith, MSc\**
- 11:30 AM – 1:00 PM     **A71**     **A Preliminary Investigation of Relationships Between Cortical Porosity and Fracture Type in Human Tibiae**  
*Mary Cole, PhD\**; *Amanda Agnew, PhD*; *Savannah McAdow*; *Carla Goldsmith, BS*; *Angela Harden, PhD*



# ANTHROPOLOGY

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- 11:30 AM – 1:00 PM     **A72**     **Analyzing the Language Used in Forensic Anthropology Population-Affinity Reporting**  
*Ilaisah Martinez, BA\**; *Allysha Winburn, PhD*; *Sean Tallman, PhD*
- 11:30 AM – 1:00 PM     **A73**     **Assessing Usage Variability in FORDISC®**  
*Sage Pletka, BS\**
- 11:30 AM – 1:00 PM     **A74**     **Evaluating Expertise in Forensic Anthropology**  
*Nicholas Passalacqua, PhD\**; *Marin Pilloud, PhD*; *MariaTeresa Tersigni-Tarrant, PhD*;  
*Natalie Langley, PhD*
- 11:30 AM – 1:00 PM     **A75**     **The Ceremonial Use of Human Remains: Palo Monte in Maricopa County, Arizona**  
*Andrew Seidel, PhD\**; *Laura Fulginiti, PhD*
- 11:30 AM – 1:00 PM     **A76**     **In Science We Trust? An Analysis of Demographic Factors Influencing Faith in Forensic Science**  
*Allysha Winburn, PhD\**; *Andrea Palmiotto, PhD*; *Christine Pink, PhD*; *Carrie LeGarde, MA*;  
*Carrie Brown, PhD*
- 11:30 AM – 1:00 PM     **A77**     **An International Validation Study of Artificial Intelligence (AI) -Guided Craniofacial Superimposition in a Contemporary Population Sample**  
*Rosario Guerra MartÃi, PhD\**; *Oscar IbÃaÃez, PhD*; *Gennifer Goad, MA*; *RubÃn Martos, PhD*;  
*Enrique Bermejo, PhD*; *Andrea Valsecchi, PhD*; *Erin Kimmerle, PhD*
- 11:30 AM – 1:00 PM     **A78**     **The Life-Long Immobility Effects on Skeletal Morphology: A Case Study Involving Cerebral Palsy**  
*Megan Carroll, BS\**; *Kerianne Armelli, PhD*; *Jane Harris, PhD*

## Friday

### Positive Forensic Identification: Collaboration and Emerging Technologies

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Moderator: Sharon Derrick

Co-Moderator: Sophia Reck

- 8:45 AM – 9:00 AM     **A79**     **The Mississippi Office of Forensic Laboratories (MOFL) Missing and Unidentified Persons Repository Project: A Collaborative Success Story**  
*Anastasia Holobinko, PhD\**; *Mary Jones Dukes, MS, MBA*; *Staci Turner, MD*
- 9:00 AM – 9:15 AM     **A80**     **The Georgian Recovery, Documentation, and Identification Project: Preliminary Results From a Mass Grave Excavation**  
*Meri Gonashvili, MD, MSc\**; *Kelly Kamnikar, PhD\**; *Nicholas Herrmann, PhD*;  
*Nino Tavartkiladze, MS*; *Tea Takniashvili, MD*; *Buba Chachkhiani, MS*; *Keegan Beane, BS*  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 9:15 AM – 9:30 AM     **A81**     **From a Simulated Environment to Real-Life Applications: Human Identification on Maxillary Sinus Morphologies**  
*Teresa Runge, MSc\**; *Matteo Borrini, PhD*
- 9:30 AM – 9:45 AM     **A82**     **Computer-Assisted CT/R Identification (Cacti®)**  
*Sharon Derrick, PhD\**; *Ruby Mehrubeoglu, PhD*; *Omer Sevinc, PhD*
- 9:45 AM – 10:00 AM     **A83**     **Forensic Identification Using Craniofacial Superimposition: Estimation of Facial Soft Tissue Depth Using Machine Learning Techniques**  
*Carlos Sanchez-MuÃoz, MSc*; *Pablo Mesejo, PhD*; *Sergio Damas, PhD\**
- 10:00 AM – 10:15 AM     **BREAK**

# ANTHROPOLOGY

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## Aspects of the Biological Profile I: Estimating Age

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Moderator: Katharine Kolpan

Co-Moderator: Kaleigh Best

- 10:15 AM – 10:30 AM    **A84**    **The Utility of Digital Bone Loss (DBL) for Biological Profile Reconstruction in Forensic Anthropology**  
*Yangseung Jeong, PhD\**; Shannon Velasquez, BS; Leslie Gonzalez, BS; Casey Tomlin, BS; Marcus Luciano; Eun Jin Woo, PhD
- 10:30 AM – 10:45 AM    **A85**    **Through the Looking Glass: The Application of Aspartic Acid Racemization to Age Estimation in a Spanish Sample**  
*Sara C. Zapico, PhD\**; Douglas Ubelaker, PhD
- 10:45 AM – 11:00 AM    **A86**    **Informative Priors Produce Precision-Accuracy Tradeoff in Dental Developmental Age Estimation**  
*Valerie Sgheiza, MA, MS\**  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 11:00 AM – 11:15 AM    **A87**    **Risser’s vs. Schulz’s Sonography Staging for Medicolegal Age Estimation in the Living**  
*Mohit Chauhan, MBBS, MD, DHM\**; Anil Aggarwal, MBBS, MD
- 11:15 AM – 11:30 AM    **A88**    **Radiographic Age Estimation Based on Vertebral Degenerative Changes**  
*Bradley Adams, PhD; Stephanie Fuehr, MA\**; Fransheska Olivares-Perez, MS; Alexandra Semma Tamayo, MSc
- 11:30 AM – 11:45 AM    **A89**    **The Age Changes in Cranial Base Synchondroses in a Cadaveric Population**  
*Melinda Carter, MD, PhD\**; Jordan Coulter, BS; Rishika Pandey, BS; Kevin Hayes, DO
- 11:45 AM – 1:00 PM                                    **BREAK**

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## Aspects of the Biological Profile II: Sex Assessment

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Moderator: Jered Cornelison

Co-Moderator: Cheyenne Collins

- 1:00 PM – 1:15 PM    **A90**    **Introducing OnSEt: The Ontogenetic Subadult Sex Estimation System**  
*Stephanie Cole, MS\**; Elaine Chu, MA; Kyra Stull, PhD  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 1:15 PM – 1:30 PM    **A91**    **The Utility of Combining Morphological and Metric Data Into Statistical Frameworks for Classification of Osteological Sex in the Pubis**  
*Katherine Lane, MA\**; John Schultz, PhD; Donovan Adams, PhD  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 1:30 PM – 1:45 PM    **A92**    **The Effect of Age on Sex Estimation of the Greater Sciatic Notch Morphology Using Walker in an Australian Population**  
*Angel DesMarais, PhDc\**; Zuzana Obertová, PhD; Daniel Franklin, PhD
- 1:45 PM – 2:00 PM    **A93**    **A Case Study for the Impact of Gender Affirming Hormone Treatment on the Gross Morphology of the Bony Pelvis in Gender Variant Individuals**  
*Raphaella Meloro, MA\**  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 2:00 PM – 2:15 PM    **A94**    **A Novel Method for Estimating Sex in New Zealand and Thai Populations Using Enthesis-Based Osteometrics From the Cranium and Clavicle**  
*Jade De La Paz, PhD\**; Stephanie Woodley, PhD, MSc; Hallie Buckley, PhD; Siân Halcrow, PhD; Nawaporn Techataweewan, MD, PhD

# ANTHROPOLOGY

2:15 PM – 2:30 PM

BREAK

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## Aspects of the Biological Profile III: Population Affinity

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Moderator: Angela Harden

Co-Moderator: Ashley Smith

- 2:30 PM – 2:45 PM     **A95**     **Examining Evolutionary Significance of Population Affinity From Craniofacial Morphological Features**  
*Amber Plemons, MA\**  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 2:45 PM – 3:00 PM     **A96**     **The Covariance, Correlation, and Mutual Information of Cranial Macromorphoscopic Traits and Interlandmark Distances**  
*Briana New, MA\*; Leah Auchter, MA; Elaine Chu, MA; Louise Corron, PhD; Kyra Stull, PhD*
- 3:00 PM – 3:15 PM     **A97**     **Biological Distance Assessment Using Matched Data From Two Geographically Proximate Samples in Latin America**  
*Kelly Kamnikar, PhD\**
- 3:15 PM – 3:30 PM     **A98**     **A Survey of Population Affinity (Ancestry) Estimation at the Defense Prisoners of War/ Missing in Action (POW/MIA) Accounting Agency**  
*Amanda Hale, MA\*; Rebecca Wilson-Taylor, PhD; Alexander Christensen, PhD; Sydney Garcia, MA*
- 3:30 PM – 4:00 PM     BREAK

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## Aspects of the Biological Profile IV: Stature Estimation

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Moderator: Natalie Lanley

Co-Moderator: Isabel Melhado

- 4:00 PM – 4:15 PM     **A100**     **The Effective Use of Stature in Forensic Identification**  
*John Byrd, PhD\**
- 4:15 PM – 4:30 PM     **A101**     **A Reassessment of Stature for Modern Native Americans Using the New Mexico Decedent Image Database (NMDID) Data**  
*Heather Edgar, PhD\*; Kelly Kamnikar, PhD; Taylor Busby, BS; Jordan Martinez, BA; Jana Meyer, MSc, MA; Mario Peña Muñoz, BS; Roberto Rios; Ian Wallace, PhD; Nicollette Appel, MS; Stephen Ousley, PhD*
- 4:30 PM – 4:45 PM     **A102**     **Expanding the Scope of Subadult Stature Estimation**  
*Elaine Chu, MA\*; Kyra Stull, PhD*  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 4:45 PM – 5:00 PM     **A103**     **Investigating the Reliability and Validity of the Portable Osteometric Device**  
*Eric Anderson, MA\*; Sierra Malis, MA; Molly Zuckerman, PhD; Anna Osterholtz, PhD*

# ANTHROPOLOGY

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## Poster Session

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- 11:30 AM – 1:30 PM    **A99**    **Exploring Macromorphoscopic Traits in Relation With Craniofacial Ratios**  
*Leah Auchter, MA\**; *Briana New, MA*; *Elaine Chu, MA*; *Louise Corron, PhD*; *Kyra Stull, PhD*
- 11:30 AM – 1:30 PM    **A104**    **How Complete Are These Remains? An Assessment of Training and Experience**  
*Andrea Palmiotto, PhD\**; *Allysha Winburn, PhD*; *Christine Pink, PhD*; *Carrie Brown, PhD*;  
*Carrie LeGarde, MA*
- 11:30 AM – 1:30 PM    **A105**    **Sorting Successive Thoracic Vertebrae in Commingled Contexts: A Geometric Morphometrics Approach**  
*Myrsini Voulgari, MSc*; *Ioanna Anastopoulou, PhD*; *Emmanouil Sakelliadis, MD, PhD*;  
*Konstantinos Moraitis, MSc, PhD\**
- 11:30 AM – 1:30 PM    **A106**    **The Impact of Age on Pair Matching Accuracy**  
*Megan Ingvaldstad, PhD\**; *Carrie LeGarde, MA*; *Andrea Palmiotto, PhD*
- 11:30 AM – 1:30 PM    **A107**    **WITHDRAWN**
- 11:30 AM – 1:30 PM    **A108**    **The Construction of a National Hydrogen and Oxygen Isoscape for Colombia as a Baseline for the Identification of the Region of Origin of Unidentified Victims of the Internal Armed Conflict**  
*Daniela Orozco Ramelli, BA\**; *Ana Carolina Guatame, MSc*; *Tiffany Saul, PhD*;  
*Jonathan Drake, MS*
- 11:30 AM – 1:30 PM    **A109**    **Isotopic Human Geolocation in North America: A Data Review and Compilation of Oxygen and Strontium Isotopic Databases**  
*Kirsten Verostick, PhD\**; *Alejandro Serna, PhD*; *Gabriel Bowen, PhD*
- 11:30 AM – 1:30 PM    **A110**    **The Utility of Birthplace Prediction From Stable Isotope Analysis in Migrant Identification**  
*Ivanna Robledo, MA\**; *Krysten Cruz, MA*; *Elisabeth Cuerrier-Richer, MSc*; *ChristiAna Dunham, MS*;  
*Kelsey Fox, MA*; *Michelle Hamilton, PhD*; *Kate Spradley, PhD*
- 11:30 AM – 1:30 PM    **A111**    **Isoscapes Around the World: Mapping International Forensic Stable Isotopes Research**  
*A. Skylar Joseph, MS\**; *Stephen Fonseca, BS*
- 11:30 AM – 1:30 PM    **A112**    **The Region-of-Origin Predictions of Arroyo Grande Jane Doe: A Cold Case Isotopic Study From Nevada**  
*Alina Tichinin, BA\**; *Taylor Lambrigger, MA*; *Elizabeth Hannigan, MA*; *Eric Bartelink, PhD*
- 11:30 AM – 1:30 PM    **A113**    **The Off-Season of Dental Cementum Investigations**  
*Benoit Bertrand, PhD\**; *Carina Marques, PhD*; *Ahmad Kaddoura*; *Anne Bécart Robert, DDS, PhD*;  
*Eugénia Cunha, PhD*; *Didier Gosset, MD, PhD*; *Valery Hédouin, MD, PhD*
- 11:30 AM – 1:30 PM    **A114**    **A New Method to Estimate Time Since Death Using Binary Observations and Random Forest Regression**  
*Michael Kenyhercz, PhD\**; *Giovanna Vidoli, PhD*
- 11:30 AM – 1:30 PM    **A115**    **Animal Scavenging of Human Skeletal Remains in Western North Carolina**  
*Maggie Klemm, BS\**
- 11:30 AM – 1:30 PM    **A116**    **Future Avenues in Research Standardization for Terrestrial Human Decomposition**  
*Hayden McKee-Zech, MSc\**; *Sarah Schwing, MA\**; *Erin Patrick, MSc*

# ANTHROPOLOGY

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- 11:30 AM – 1:30 PM    **A117**    **Setting a Baseline: An Analysis of Florida’s Forensic Institute for Research, Security, and Tactics (F1RST)**  
*Austin Polonitza, MS\*; Heather Walsh-Haney, PhD*
- 11:30 AM – 1:30 PM    **A118**    **The Skeletal Manifestations of Striped Skunk (*Mephitis Mephitis*) Scavenging on Human Remains**  
*Alexander Smith, BA\**
- 11:30 AM – 1:30 PM    **A119**    **Surveying Scavengers and Their Taphonomic Effects in Murfreesboro, Tennessee**  
*Miranda Fain, BS\*; Yangseung Jeong, PhD*
- 11:30 AM – 1:30 PM    **A120**    **The Applicability of the Postmortem Submersion Interval Estimation Formula for Human Remains Found in Subtropical Aquatic Environments**  
*Kara DiComo, BA\*; Erin Kimmerle, PhD*
- 11:30 AM – 1:30 PM    **A121**    **The Effect of Multiple Interments on Soil pH and Decomposition in Two Cemeteries in Cyprus: Implications for Future Cemetery Use**  
*Huntyr Hill, BS\*; Delanie Fether, BS; Hannah Carson, BS; Anna Williams, PhD; Xenia-Paula Kyriakou, MA, PhD*
- 11:30 AM – 1:30 PM    **A122**    **Using Fiber-Optic Reflectance Spectroscopy (FORS) to Identify Humans Decomposition Characteristics in Plants and Soil**  
*Anielle Duncan, BA\*; Sierra M. Bow, PhD; Amy Mundorff, PhD; Dawnie Steadman, PhD*
- 11:30 AM – 1:30 PM    **A123**    **The Effects of Varying Soil pH and Aluminum Foil Wrapping on the Elemental Composition of Bones**  
*Raeann Motacek, BA\*; Lillian Gonzales, BS\*; Andrea Palmiotto, PhD*
- 11:30 AM – 1:30 PM    **A124**    **Decomposition in the Desert: An Examination of the Relationship Between Exposure to Ultraviolet Radiation and the Process of Decomposition**  
*Mia Spanyers, BS; Kaitlyn Fulp, MA\*; Katelyn Bolhofner, PhD*
- 11:30 AM – 1:30 PM    **A125**    **The Effects of Topography and Animal Scavenging on the Dispersal Patterns of Surface-Scattered Human Remains: A Study of a Forensic Sample From Actual Casework**  
*Kristine Kortonick, MS\*; Luis Cabo, MS*
- 11:30 AM – 1:30 PM    **A126**    **Carnivore-Related Bone Damage and Dispersal in the Swiss Alps: A Forensic Anthropological Analysis**  
*Lara Indra, MSc\*; Sandra Lösch, PhD*
- 11:30 AM – 1:30 PM    **A127**    **The Effects of the Fluvial Environment on Saw Mark Evidence in Bone**  
*Tyra Volney, BS\*; Alicia Grosso, PhD\**
- 11:30 AM – 1:30 PM    **A128**    **Postmortem Skeletal Damage Characteristics From Coffin Contexts Mimicking Thermal and Sharp Force Indicators**  
*Rebecca Wilson-Taylor, PhD\*, Janet Finlayson, PhD; Katie Rubin, PhD*
- 11:30 AM – 1:30 PM    **A129**    **Trends in Forensic Taphonomic Research Over Time Within the American Academy of Forensic Sciences**  
*Rhian Dunn, MS; Paige Lynch, MS; Andrea Zurek-Ost, MS\**
- 11:30 AM – 1:30 PM    **A130**    **A Comparison of Anthropological Methods and Next Generation Sequencing for Population Affinity in the East Marshall Street Well**  
*Amber Mundy, MS\*; Baneshwar Singh, PhD; Joseph Jones, PhD; Erin Gorden, MFS; Tal Simmons, PhD*

# CRIMINALISTICS

## Wednesday

### Poster Session

11:30 AM – 1:00 PM	<b>B1</b>	<b>WITHDRAWN</b>
11:30 AM – 1:00 PM	<b>B2</b>	<b>WITHDRAWN</b>
11:30 AM – 1:00 PM	<b>B3</b>	<b>An Investigation of Trace DNA Samples From Objects Stolen in Pickpocket Scenarios</b> <i>Tiffany Kreidler, BS*</i> ; <i>Lauren Hoopes, BS</i> ; <i>Bas Kokshoorn, PhD</i> ; <i>Fabio Oldoni, PhD</i> (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 AM – 1:00 PM	<b>B4</b>	<b>The Optimized Recovery of DNA From Exhaled Breath Devices: From Drug Detection to Human Identification</b> <i>Kayli Carrillo, BS*</i> ; <i>Sheree Hughes, PhD</i>
11:30 AM – 1:00 PM	<b>B5</b>	<b>The Impact of 1,4-Dithiothreitol (DTT) on the Microbial Community Structures Associated With Human Semen Samples</b> <i>Christian Blaise, MS</i> ; <i>Denise Wohlfahrt, BS*</i> ; <i>Tomasz Arodz, PhD</i> ; <i>Sarah Seashols-Williams, PhD</i> ; <i>Baneshwar Singh, PhD</i>
11:30 AM – 1:00 PM	<b>B6</b>	<b>Can We Predict DNA Shedding Propensity From Other Individual Characteristics?</b> <i>Genesis Echavarria, BS*</i> ; <i>Ines Cedillo, MS</i> ; <i>Nicholas D.K. Petraco, PhD</i> ; <i>Mechthild Prinz, PhD</i>
11:30 AM – 1:00 PM	<b>B7</b>	<b>The Multiple Reaction Monitoring Tandem Mass Spectrometry Approach: A Tool for Latent Stains of Biological Fluids Identification in Forensic Sciences Laboratory</b> <i>Aldo Di Nunzio, MS*</i> ; <i>Anna Illiano, MS</i> ; <i>Chiara Melchiorre, MS</i> ; <i>Gabriella Pinto, MS</i> ; <i>Ciro Di Nunzio, BS*</i> ; <i>Nadia Tinto, MD</i> ; <i>Francesco Sessa, MS, PhD</i> ; <i>Massimiliano Esposito, MD</i> ; <i>Piero Pucci, MS</i> ; <i>Angela Amoresano, MS</i>
11:30 AM – 1:00 PM	<b>B8</b>	<b>The Enhanced Collection and Recovery of Touch DNA Samples From Challenging Surfaces Using A Venturi Vacuum Device (VVD) Across Two Forensic DNA Workflows</b> <i>Joseph Rahm, BS*</i> ; <i>Charday Ward, BS</i> ; <i>DeEtta Mills, PhD</i>
11:30 AM – 1:00 PM	<b>B9</b>	<b>Touch DNA: An Evaluation of a Novel Collection Method</b> <i>Jamie Fredericks, PhD*</i> ; <i>Hannah Varner, BSc</i>
11:30 AM – 1:00 PM	<b>B10</b>	<b>Exploring Target Areas for Recovering Informative DNA Profiles From Eyeglasses</b> <i>Isabel Melhado, BS*</i> ; <i>Krista Latham, PhD</i> ; <i>Cynthia Cale, MS</i> ; <i>Alex Wong, BA*</i> (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 AM – 1:00 PM	<b>B11</b>	<b>The DNA Transfer to Bedsheets in Differing Cohabitation Environments</b> <i>Jordan Roberson, BA*</i> ; <i>Olivia Messenger, BA*</i> ; <i>Krista Latham, PhD</i> ; <i>Cynthia Cale, MS</i> (FSF Emerging Forensic Scientist Award Poster Presentation)
11:30 AM – 1:00 PM	<b>B12</b>	<b>Morphological and Autofluorescence Signatures for the Identification of Vaginal Cells in Mixture Samples Containing Saliva and/or Epidermal Cells</b> <i>Hannah Burden, BS*</i> ; <i>Arianna DeCorte, MS</i> ; <i>Sarah Ingram, PhD</i> ; <i>Christopher Ehrhardt, PhD</i>
11:30 AM – 1:00 PM	<b>B13</b>	<b>The Application of an Improved Processing Method of Touch DNA Samples</b> <i>Deborah Soares Bispo Santos Silva, PhD</i> ; <i>Hannah Calista</i> ; <i>Caitlyn Martinez</i> ; <i>Ryan Smith, PhD</i> ; <i>Georgiana Gibson-Daw, PhD*</i>

# CRIMINALISTICS

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- 11:30 AM – 1:00 PM    **B14**    **Trace DNA: Recovery Efficiency From Patrimonial Crimes in the Brazilian Federal Police**  
*Camila Maciel, BS; Bruno Trindade, PhD\**
- 11:30 AM – 1:00 PM    **B15**    **Improving the Analysis of Forensic Samples Using a Microwave Treatment and Rapid, Direct Polymerase Chain Reaction (PCR)**  
*Fabiana Taglia, PhD\*; Nicole Fernandez-Tejero, MS; Casandra Setser, PhD; Ling Wang, PhD; Kevin Lothridge, MS; Bruce McCord, PhD; Steven Lee, PhD*
- 11:30 AM – 1:00 PM    **B16**    **Finding the DNA: How Much Was Recovered and Where Did the Rest Go?**  
*Kyra Uramoto, MS\*; Robin Cotton, PhD*
- 11:30 AM – 1:00 PM    **B17**    **Using Exact Likelihood Ratio (LR) Distributions for Probabilistic Genotyping Software Validation**  
*Mark Perlin, PhD, MD\*; Jennifer Hornyak Bracamontes, MS; Erin Estus, MS*
- 11:30 AM – 1:00 PM    **B18**    **The Algorithm Performance on a Firearm Examiner Black Study**  
*Eric Law, PhD\*; Makia Maxey\*; Keith Morris, PhD*
- 11:30 AM – 1:00 PM    **B19**    **An Assessment of a Novel Method for Physical Fit Examinations Using an Extensive Database of Casework-Like Samples and Interlaboratory Studies**  
*Zachary Andrews, MS\*; Meghan Prusinowski, MS; Tatiana Trejos, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)*
- 11:30 AM – 1:00 PM    **B20**    **A Case Report: Identification of AP-238 and 2-Fluorodeschloroketamine in Internet-Available Powder Samples**  
*Karissa Resnik, MS; Justin Poklis, BS; Michelle Peace, PhD; Frederick Moeller, MD; Emanuele Alves, PhD\**
- 11:30 AM – 1:00 PM    **B21**    **The Evaluation of Three Derivatization Reagents for the Identification of Eight Aminoindanes by Gas Chromatography/Mass Spectrometry (GC/MS)**  
*Thomas Brettell, PhD\*; Amber Rose, MS; Monica Joshi, PhD; Matthew Wood, PhD; Marianne Staretz, PhD*
- 11:30 AM – 1:00 PM    **B22**    **Investigating the Effect of Substitution Location on Fentanyl Analog Identification for Methyl-Substituted Fentanyl Analogs Using Gas Chromatography/Electron Ionization/Mass Spectrometry (GC/EI/MS)**  
*Alexis Pollard, BS\*; J. Tyler Davidson, PhD*
- 11:30 AM – 1:00 PM    **B23**    **Multiple Micro-Abrasions on the Shooter's Hand and the Recharge of Ammunition at Home**  
*Benedetta Pia De Luca, MD\*; Alessandra Stellacci, MD; Luigi Buongiorno, MD; Pierluigi Caricato, MD; Carlo Angeletti, MD; Fortunato Pititto, MD; Maricla Marrone, MD; Giuseppe Strisciullo, BES; Francesco Vinci, MD*
- 11:30 AM – 1:00 PM    **B24**    **The Sampling of Materials Using Laser Ablation and Electrostatic Capture, and the Analysis of Captured Particles Using Thermal Desorption Electrospray Ionization (TD-ESI) and an Ion Trap Mass Spectrometer**  
*Brendan Minick\*; Kenyon Evans-Nguyen, PhD*
- 11:30 AM – 1:00 PM    **B25**    **Spectral Trends in Gas Chromatography/Electron Ionization/Mass Spectrometry (GC/EI/MS) Data From the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) Library and Literature**  
*William Feeney, PhD\*; Arun Moorthy, PhD; Edward Sisco, PhD*

# CRIMINALISTICS

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- 11:30 AM – 1:00 PM     **B26**     **Statistical Discrimination Methods for Forensic Source Interpretation: The Application to Micromorphometric Feature Measurement of Aluminum Powders Used in Explosives**  
*Danica Ommen, PhD\**; Christopher Saunders, PhD; JoAnn Buscaglia, PhD\*
- 11:30 AM – 1:00 PM     **B27**     **A Survey of Mounting Media Used for Hair and Fiber Microscopy**  
*Maria Lawas, MS; Linda Otterstatter, BS; Joshua Friedman, MS; Joseph Donfack, PhD\**
- 11:30 AM – 1:00 PM     **B28**     **The Application of Surface-Enhanced Raman Spectroscopy (SERS) for the Detection of Synthetic Cathinones**  
*Mario Vendrell-Dones, MS\**; Bruce McCord, PhD
- 11:30 AM – 1:00 PM     **B29**     **The Unique Capability of Direct Analysis in Real-Time Mass Spectrometry (DART®-MS) for the Detection of Less Volatile Components in Ignitable Liquids**  
*Shruthi Perna, MS\**; Briza Marie Dedicataria, BS; Ngee Sing Chong, PhD; Mengliang Zhang, PhD\*
- 11:30 AM – 1:00 PM     **B30**     **The Volatile Organic Compounds (VOCs) of Training Aids Used for Human Remains Detection Canines: A Survey on the Impact of Storage Conditions on Odor Signature**  
*Fantasia Whaley, PhD\**; Lauryn DeGreeff, PhD
- 11:30 AM – 1:00 PM     **B31**     **An Assessment of Field-Portable Instrumentation for Pre-Blast Explosives Detection**  
*Makenzie Kuehn, BS\**; J. Tyler Davidson, PhD; Geraldine Monjardez, PhD
- 11:30 AM – 1:00 PM     **B32**     **Dating Crime Evidence With Microbes: The Ideal Forensic Clock?**  
*Josep De Alcaraz-Fossoul, PhD\**; Yue Wang, PhD; Ruoqian Liu, MS; Michelle Mancenido, PhD; Pamela Marshall, PhD; Celeste Núñez, BS; Jennifer Broatch, PhD; Lara Ferry, PhD
- 11:30 AM – 1:00 PM     **B33**     **The Development of a Self-Assembled Gold Nanoparticle Thin Film to Support Field Detection of Trace Chemicals**  
*Taylor Parmer, BS\**; Geraldine Monjardez, PhD; Jorn (Chi-Chung) Yu, PhD; Sarah Stewart, MS
- 11:30 AM – 1:00 PM     **B34**     **An Analysis of Polymer-Coated Bullets Using Spectroscopic Methods**  
*Liana Albano, BS\**; Peter Diaczuk, PhD
- 11:30 AM – 1:00 PM     **B35**     **Differentiation of Delta-9-Tetrahydrocannabinol (Delta-9-THC) and Cannabidiol (CBD) Using Silver-Ligand Ion Complexation and Electrospray Ionization Tandem Mass Spectrometry (ESI-MS/MS)**  
*Alleigh Couch, BS\**; Jayleigh Lanza, BS; Christopher Zall, PhD; J. Tyler Davidson, PhD
- 11:30 AM – 1:00 PM     **B36**     **Assessing the Individual and Joint Use of Ultraviolet/Visible (UV/VIS) Microspectrophotometry and Scanning Electron Microscopy/Energy Dispersive Spectroscopy (SEM/EDS) to the Differentiation of Colored Spray Paint**  
*Morgan Carpenter, BS\**; Jared Estevanes, BS; Patrick Buzzini, PhD
- 11:30 AM – 1:00 PM     **B37**     **Tool Mark Matching Using 3D Structures**  
*Nam-Kyu Park, PhD\**; Hoyong Yie, ME; Young-Il Seo, MS



# CRIMINALISTICS

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## Thursday—Session I

### The Past, Present, and Future

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Moderator: Charlotte Word

Co-Moderator: Pamela Marshall

- 9:00 AM – 9:15 AM     **B38**     **Standards Development Activities in Human Forensic Biology**  
*Beth Ordeman, BS, MS; Charlotte Word, PhD\**
- 9:15 AM – 9:30 AM     **B39**     **DNA Testing: Looking Back and Looking Forward**  
*Robin Cotton, PhD\**
- 9:30 AM – 9:45 AM     **B40**     **“Back to the Future”—Bayes’ Theorem Goes Around, Comes Around**  
*Patrick Buzzini, PhD; Tim Kalafut, PhD\**
- 9:45 AM – 10:00 AM     **BREAK**

### Differential Extraction and BFID

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Moderator: Rachelle Turiello

Co-Moderator: Brian Higgins

- 10:00 AM – 10:15 AM     **B41**     **When and “Y” to Screen With QIAGEN® Investigator® Casework GO!**  
*Julia Wang, MS\*; Grace Rutledge, MS; Rachel Houston, PhD; Sheree Hughes, PhD*
- 10:15 AM – 10:30 AM     **B42**     **An Interlaboratory Comparison of SpermX™ and Conventional Differential Extractions for DNA Analysis of Sexual Assault Samples**  
*Sudhir Sinha, PhD\*; Joanne Sgueglia, BA\*; Hailey Holt, BS; Erin Hanson, PhD; Justina Nichols, MSFB; Tim Kalafut, PhD; Mah-Ro Khan, MS; Thomas Walsh, MSFS; Megan Foley, MSFS; John (Jack) Ballantyne, PhD; Hiromi Brown, PhD*
- 10:30 AM – 10:45 AM     **B43**     **Modified Differential Cell Lysis Using a Combined prepGEM™ and Alkaline Approach**  
*Brittany Hudson, MS\*; Tracey Dawson Green, PhD*
- 10:45 AM – 11:00 AM     **B44**     **WITHDRAWN**
- 11:00 AM – 11:15 AM     **B45**     **Evil Under the Sun: An Assessment of Body Fluid Identification and DNA Profiling After Exposure to Tropical Weather Conditions**  
*Sara C. Zapico, PhD\*; Christian Stadler, PhD; Gabriela Roca, PhD*
- 11:15 AM – 11:30 AM     **B46**     **The Impact of Various Storage Temperatures and Times on the Microbiome of Forensically Relevant Biological Samples**  
*Denise Wohlfahrt, BS\*; Sarah Seashols-Williams, PhD; Baneshwar Singh, PhD*
- 11:30 AM – 11:45 AM     **B47**     **Forensic Body Fluid Classification Using a Panel of MicroRNAs in DNA Extracts**  
*Ciara Rhodes, BS\*; Kelsey Price, MS; Anaya Valentine, MS; Carolyn Lewis, PhD; Edward Boone, PhD; Sarah Seashols-Williams, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 11:45 AM – 12:00 PM     **B48**     **A Field-Forward Microfluidic Method for Transcriptomic Serological Analysis**  
*Renna Nouwairi, BS\*; Larissa Cunha, BS; Tiffany Layne, PhD; Rachel Fleming, PhD; James Landers, PhD*
- 12:00 PM – 1:30 PM     **BREAK**

# CRIMINALISTICS

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## Probabilistic Genotyping

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Moderator: *Tim Kalafut*

Co-Moderator: *Taylor Dickerson*

- 1:30 PM – 1:45 PM     **B49**     **My Results are Unintuitive, Now What? Casework Studies on Unintuitive STRmix™ Results and the Approaches Utilized for Reporting**  
*Alicia Cadenas, MS\**; *Samantha Wandzek, MS*
- 1:45 PM – 2:00 PM     **B50**     **Probabilistic Genotyping With Microhaplotypes**  
*Daniele Podini, PhD\**; *Helene Douglas, BS*; *Sofia Arichavala Centeno, BS*; *Angie Zhao, MFS*; *Katherine Rizzolo, MFS*; *Fabio Oldoni, PhD*
- 2:00 PM – 2:15 PM     **B51**     **Identifying Victim Remains Using Kinship Genotype Inference**  
*Mark Perlin, PhD, MD\**; *William Allan, MS*
- 2:15 PM – 2:30 PM     **BREAK**

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## Trace DNA and Mixtures

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Moderator: *Lisa Burdett*

Co-Moderator: *Fabio Oldoni*

- 2:30 PM – 2:45 PM     **B52**     **DNAmix 2021—Inter-laboratory Variation in Interpretations, Comparisons, and Statistical Analyses of DNA Mixtures**  
*R. Austin Hicklin, PhD\**; *Nicole Richetelli, PhD\**; *Brandi Emerick, PhD*; *Jonathan Davoren, MSc*
- 2:45 PM – 3:00 PM     **B53**     **Selectively Analyzing and Interpreting DNA From Multiple Donors With a Full Single-Cell Strategy**  
*Nidhi Sheth, MSc\**; *Leah O'Donnell, MS*; *Madison Mulcahy, BS*; *Ken Duffy, PhD*; *Desmond Lun, PhD*; *Catherine Grgicak, PhD*
- 3:00 PM – 3:15 PM     **B54**     **Using a Non-Destructive Method to Predict DNA Yield and the Presence of a Mixture in Touch DNA**  
*Sarah Roisch, BS\**; *Susan Greenspoon, PhD*; *Christopher Ehrhardt, PhD*; *Sarah Ingram, PhD*
- 3:15 PM – 3:30 PM     **B55**     **Is This Fingermark Suitable for Dactyloscopy or Genotyping? It Depends on the Minimum Surface Requirement (MSR)!**  
*Michele Di Nunzio, MSc\**; *Josep De Alcaraz-Fossoul, PhD\**; *Carme Barrot-Feixat, PhD*
- 3:30 PM – 3:45 PM     **B56**     **Using Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR) to Characterize Circulating Free DNA (cfDNA) Interactions With Metal Surfaces to Optimize The Collection and Processing of Touch DNA Samples**  
*Jessica Thornton, BS\**; *Tina Moroosse, MS*; *Keith Morris, PhD*
- 3:45 PM – 4:00 PM     **B57**     **Updating Research Data on Firearms Cases Using Expanded Autosomal Short Tandem Repeat (STR) Kits**  
*Rachel Oefelein, MS\**
- 4:00 PM – 4:15 PM     **B58**     **Generating Short Tandem Repeat (STR) Profiles on a Porous Substrate Using Nile Red Detection**  
*Ryan Hinojosa, BS\**; *Janine Kishbaugh, MS*; *Lawrence Quarino, PhD*; *Jillian Conte, PhD*
- 4:15 PM – 4:30 PM     **B59**     **An Automated Genotype Database for Associating Counterfeit Drug Evidence**  
*Mark Perlin, PhD, MD\**; *William Allan, MS*; *Matthew Legler, BS*

# CRIMINALISTICS

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## Thursday—Session II

### Standard Development and Related Activities Strengthening Forensic Science

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Moderator: Beth Saucier Goodspeed

Co-Moderator: Jason Bory

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|---------------------|------------|---|
| 8:30 AM – 8:45 AM   | <b>B60</b> | <b>Standards Development Activities in Firearm and Toolmark Examination</b><br><i>Robert Sanger, JD*</i>  |
| 8:45 AM – 9:00 AM   | <b>B61</b> | <b>Standards Development Activities in Trace Materials</b><br><i>Celeste Grover, MSFS*</i>  |
| 9:00 AM – 9:15 AM   | <b>B62</b> | <b>Standards Development Activities Related to Ignitable Liquids, Explosives, and Gunshot Residue</b><br><i>Brenda Christy, MS*</i>   |
| 9:15 AM – 9:30 AM   | <b>B63</b> | <b>Standards Development Activities Related to the Examination of Friction Ridge Detail</b><br><i>Heidi Eldridge, PhD*</i>  |
| 9:30 AM – 9:45 AM   | <b>B64</b> | <b>Current and Future Standards Development Activities in Seized Drugs</b><br><i>Agnes Winokur, MS*</i>   |
| 9:45 AM – 10:00 AM  | <b>B65</b> | <b>The Development of a Standard Guide for the Use of X-Ray Diffraction in the Forensic Examination of Geological Materials</b><br><i>Libby Stern, PhD*; Ian Saginor, PhD; Alastair Ruffell, PhD</i>  |
| 10:00 AM – 10:15 AM | <b>B66</b> | <b>Seized Drugs Process Map</b><br><i>David Gouldthorpe, MS*; Melissa Taylor, BA; Heather Waltke, MFS, MPH</i>  |
| 10:15 AM – 10:30 AM | <b>B67</b> | <b>An Inter-Laboratory Study to Assess Practical Utility of the Organization of Scientific Area Committees (OSAC) -Proposed Standard 2021-S-0006 (Standard for the Use of GenBank for Taxonomic Assignment of Wildlife)</b><br><i>Khushi Patel; Melissa Scheible, MFS; Kelly Meiklejohn, PhD*</i> |
| 10:30 AM – 10:45 AM | <b>B68</b> | <b>An Update on the Status of the Department of Justice, Office of Justice Programs, National Institute of Justice (NIJ), National Center on Forensics (NCF) Grant</b><br><i>Joseph DiZinno, DDS*</i>   |
| 10:45 AM – 11:00 AM |            | <b>BREAK</b>  |

### Forensic Science Principles—A Closer Look at the Sydney Declaration

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Moderator: Patrick Buzzini

Co-Moderator: Michelle Miranda

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|---------------------|------------|--|
| 11:00 AM – 11:15 AM | <b>B69</b> | <b>Revisiting the Essence of Forensic Science: The Sydney Declaration Coming of Age?</b><br><i>Claude Roux, PhD*; Rebecca Bucht, PhD; Patrick Buzzini, PhD; Frank Crispino, PhD; Peter De Forest, DCrim; Keith Inman, MCrim; Pierre Margot, MSc, PhD; Michelle Miranda, PhD; Olivier Ribaux, PhD; Niamh Nic Daeid, PhD; Sheila Willis, PhD</i> |
| 11:15 AM – 11:30 AM | <b>B70</b> | <b>The Sydney Declaration: Should We Care About Forensic Science Principles?</b><br><i>Claude Roux, PhD*; Rebecca Bucht, PhD; Patrick Buzzini, PhD; Frank Crispino, PhD; Olivier Ribaux, PhD</i>   |

# CRIMINALISTICS

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11:30 AM – 11:45 AM	<b>B71</b>	<b>An Exercise in Scientific Problem Solving</b> <i>Peter De Forest, DCrim; Michelle Miranda, PhD; Patrick Buzzini, PhD*; Sheila Willis, PhD</i>
11:45 AM – 12:00 PM	<b>B72</b>	<b>Ficta Vivos Docent: Learning From Detective Fiction</b> <i>Michelle Miranda, PhD*; Peter De Forest, DCrim</i>
12:00 PM – 1:00 PM		<b>BREAK</b>

## Fire Debris, Explosives, and Firearms

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Moderator: Rita Newman

Co-Moderator: Brenda Christy

1:00 PM – 1:15 PM	<b>B73</b>	<b>A Study Comparing the Use of Agilent® QP Gas Chromatography/Mass Spectrometry (GC/MS) for Screening and Gas Chromatography/Tandem Mass Spectrometry (GC/MS/MS) for the Confirmation of Smokeless Powders</b> <i>Monica Joshi, PhD*; Blake Kerstetter, BS; Kirk Lokits, MS, PhD</i>
1:15 PM – 1:30 PM	<b>B74</b>	<b>Assessing the Evidentiary Value in Fire Debris Analysis: A Proposed Workflow</b> <i>Frances Whitehead, MS; BS*; Michael Sigman, PhD; Mary Williams, MS</i>
1:30 PM – 1:45 PM	<b>B75</b>	<b>The Detection of Gasoline in Fire Debris Using Artificial Intelligence: Image Transformation of Gas Chromatography and Mass Spectrometry Data and Deep Learning</b> <i>Ting-Yu Huang, MSc*; Jorn (Chi-Chung) Yu, PhD</i>
1:45 PM – 2:00 PM	<b>B76</b>	<b>Method Optimization and Validation for a Confined Thermal Desorption-Direct Analysis in Real-Time Mass Spectrometry (TD-DART-MS) Sampling Interface Developed for Ignitable Liquid Analysis</b> <i>Briana Capistran, PhD*; Matthew Staymates, MS; Edward Sisco, PhD</i>
2:00 PM – 2:15 PM	<b>B77</b>	<b>Population Statistics and a Reference Population Database of Firearm Toolmarks</b> <i>Xiaoyu Zheng, MS*; Johannes Soons, PhD; Erich Smith, MS; Martin Baiker-Sørensen, PhD</i>
2:15 PM – 2:30 PM	<b>B78</b>	<b>Reporting Likelihood Ratio (LR) for Case Work in Firearm Evidence Identification</b> <i>John Song, PhD*</i>
2:30 PM – 2:45 PM	<b>B79</b>	<b>The Role of Adsorption on the Detectability of Contained Explosives and Drugs</b> <i>Emma Calabrese, BS*; Lauryn DeGreeff, PhD</i>
2:45 PM – 3:00 PM	<b>B80</b>	<b>The Combined Solid Phase Extraction Procedure for the Analysis of Organic and Inorganic Explosives Residue</b> <i>Courtney Cruse, PhD*; Amara Borchers, BS; Kristen Fowble, PhD; David Pavone, MFS; Jennifer Thomas, PhD; Stephanie Armas, MS; Mark Miller, PhD; Sarah Sipe, PhD</i>
3:00 PM – 3:15 PM	<b>B81</b>	<b>The Statistical Characterization of the Discriminating Power of Trace Elemental Concentrations of Aluminum Foils Used in Improvised Explosive Devices</b> <i>Anjuli Bhandari, PhD; Michelle Jordan, PhD; Danica Ommen, PhD; Christopher Saunders, PhD*; JoAnn Buscaglia, PhD*</i>
3:15 PM – 3:30 PM	<b>B82</b>	<b>Gunshot Suicides Caused by Cane-Gun and Alarm Garden Gun Cannon: Two Case Reports</b> <i>Lea-Helena Rossi, MD*; Nathalie Jousset, MD; Stephane Malbranque, MD</i>
3:30 PM – 3:45 PM		<b>BREAK</b>

# CRIMINALISTICS

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## Drugs I

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Moderator: DeMia Pressley

Co-Moderator: Mariel Candelario-Gorbea

- 3:45 PM – 4:00 PM    **B83**    **The Application of the Expert Algorithm for Substance Identification (EASI) on Synthetic Cathinones Using Mass Spectrometry (MS)**  
*Glen Jackson, PhD\**; *Alexandra Adeoye, MS*; *Jessica Orris, BS*; *Stephen Hokanson, BS*
- 4:00 PM – 4:15 PM    **B84**    **The Application of the Expert Algorithm for Substance Identification (EASI) to the Mass Spectral Identification of Fentanyl Analogs**  
*Alexandra Adeoye, MS\**; *Glen Jackson, PhD*
- 4:15 PM – 4:30 PM    **B85**    **The Development and Validation of a Quantitative Method for the Analysis of Fentanyl Containing “Dope” Samples**  
*Joshua DeBord, PhD\**; *Jennifer Shinefeld, MS*; *Barry Logan, PhD*; *Alex Krotulski, PhD*
- 4:30 PM – 4:45 PM    **B86**    **Distinguishing Piperazine and 12 Analogs Using Raman Microspectroscopy and Chemometrics**  
*Brianna Zettlemoyer, BS\**; *Thomas Brettell, PhD*; *Monica Joshi, PhD*; *Lawrence Quarino, PhD*
- 4:45 PM – 5:00 PM    **B87**    **Untargeted Headspace/Solid-Phase Microextraction Coupled to Gas Chromatograph/Mass Spectrometer (HS/SPME-GC/MS)? An HS/SPME-GC/MS Analysis of Terpenes and Cannabinoids for the Geographical Sourcing of Marijuana Using Multivariable Data Analysis**  
*Janet Crespo Cajigas, MS\**; *Howard Holness, PhD*; *Lauryn DeGreeff, PhD*; *Kenneth Furton, PhD*
- 5:00 PM – 5:15 PM    **B88**    **The Development and Validation of a Method for the Differentiation of Hemp and Marijuana by Gas Chromatography/Mass Spectrometry (GC/MS)**  
*Sarah Shuda, MSFS\**; *Joshua Folger, BS*; *Barry Logan, PhD*

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## Poster Session

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- 11:30 AM – 1:00 PM    **B89**    **The Commercialization of a Universal Method for Body Fluid Identification for Forensic Purposes**  
*Alexis Weber, MS\**; *Igor Lednev, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **B90**    **The Evaluation of Demineralization Parameters for DNA Extraction Methods From Skeletal Remains**  
*Jennifer Snedeker, BS\**; *Erin Gorden, MFS*; *Gina Parada, MSFS*; *Christina Neal, MS*; *Carmen Reedy, PhD*; *Rachel Houston, PhD*  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **B91**    **Improving Allele Call Rates for Challenging Samples With ePCR1 Buffer**  
*Brooke Ouwerkerk, BTech, BSc\**; *Georgina Lush, BS*; *Renee Leduc, PhD*; *Steen Hartsen, MBA, BSc, BTech*; *Jason Moore, MA, BSc*
- 11:30 AM – 1:00 PM    **B92**    **The Differentiation of *Cannabis Sativa* Crop Type and Biogeographical Origin Using Nine Novel Chloroplast Single Nucleotide Polymorphism (SNP) Markers**  
*Michele Di Nunzio, MSc\**; *Carme Barrot-Feixat, PhD*; *David Gangitano, PhD*
- 11:30 AM – 1:00 PM    **B93**    **Maximum DNA Recovery From Cold Case Victims Using Ancient and Forensic DNA Extraction Methods**  
*Erin Rawls, BS\**; *Amber Coffman, BS*; *Cody Parker, PhD*; *Laura Fulginiti, PhD*; *Anne Stone, PhD*; *Matthew Emery, PhD*; *Jane Buikstra, PhD*; *Amanda Wissler, PhD*; *Robert Oldt, BS*; *Sreetharan Kanthaswamy, PhD*; *Stevie Winingear, MA*

# CRIMINALISTICS

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- 11:30 AM – 1:00 PM     **B94**     **Mitochondrial DNA Sequence Variation in the Lebanese Population**  
*Breanna Nickels, BS\**; *Kimberly Andreaggi, PhD*; *Elise Anderson, MSFS*;  
*Jennifer Higginbotham, MFS*; *Mirna Ghemrawi, PhD*; *Susan Walsh, PhD*;  
*Dennis De Luca, PhD*; *Charla Marshall, PhD*
- 11:30 AM – 1:00 PM     **B95**     **Utilizing Environmental DNA (eDNA) from Geologic Materials for Sample-to-Sample Comparisons**  
*Teresa M. Tiedge, MPS\**; *Kelly Meiklejohn, PhD*
- 11:30 AM – 1:00 PM     **B96**     **Optimizing DNA Extraction in Highly Degraded Bone**  
*Michelle Woo, BS\**; *Daniela Frausto, BS\**; *Tal Simmons, PhD*; *Joseph Jones, PhD*;  
*Baneshwar Singh, PhD*
- 11:30 AM – 1:00 PM     **B97**     **The Development of a Screening Tool to Determine Optimal Sampling Sites for DNA Recovery From Human Skeletal Remains**  
*Kathleen Smith, BS\**; *Angie Ambers, PhD*; *Brooke Kammrath, PhD*
- 11:30 AM – 1:00 PM     **B98**     **The Generation of High-Quality Libraries for the Prediction of External Visible Characteristics and Biogeographical Ancestry Using a Low-Cost Automation Platform**  
*Riya Thekdi, MFS\**; *Juan Carlos Perez, BS*; *Richelle Barta, BS*; *Erin McCarthy, BS*;  
*Elmira Forouzmand, PhD*; *Samantha Dowles, BS*; *Gothami Padmabandu, MS*;  
*Kathryn Stephens, PhD*
- 11:30 AM – 1:00 PM     **B99**     **The Optimization of Single Nucleotide Polymorphism (SNP) SNaPshot™ Multiplexes to Distinguish Fiber and Drug-Type Cannabis Sativa**  
*Natalia Czado, MSFS\**; *Sheree Hughes, PhD*; *Rachel Houston, PhD*
- 11:30 AM – 1:00 PM     **B100**     **Creating a Forensic Reference Ladder and Multiplex to Be Used in Animal Abuse Cases**  
*Vallarie Ostenson, BS\**; *DeEtta Mills, PhD*
- 11:30 AM – 1:00 PM     **B101**     **The Creation of a Presumptive Multiplex Kit to Test for the Presence of Domestic Animal Mitochondrial DNA in Cases of Presumed Animal Abuse**  
*Lindsey Kaufman, BA\**; *DeEtta Mills, PhD*
- 11:30 AM – 1:00 PM     **B102**     **The Potential of the 165 Ancestry-Informative Single Nucleotide Polymorphisms (SNPs) in Further Discriminating Asian Populations**  
*Sohee Cho, PhD\**; *Soong Deok Lee, MD, PhD*; *Haeun You, BS*
- 11:30 AM – 1:00 PM     **B103**     **The Use of Optical Trapping Coupled With a Microfluidic Device for Cell Separation**  
*Brittney Hackworth, BS\**; *Samantha Pagel, MSFS*; *Sarah Seashols-Williams, PhD*;  
*Joseph Reiner, PhD*; *Mackenzie Lally, MSFS*; *Tracey Dawson Green, PhD*
- 11:30 AM – 1:00 PM     **B104**     **The Effects of the Composition of Whole Saliva/Oral Fluids on the Development of Epigenetic Markers**  
*Nicole Fernandez-Tejero, MS\**; *Mirna Ghemrawi, PhD*; *Bruce McCord, PhD*
- 11:30 AM – 1:00 PM     **B105**     **A Snapshot of Current Opinions on Sequencing Technology in Forensics**  
*Megan Foley, MSFS*; *Fabio Oldoni, PhD\**  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM     **B106**     **A Side-by-Side Evaluation of Presumptive Blood Identification Tests**  
*Hillary Culbertson, PhD\**
- 11:30 AM – 1:00 PM     **B107**     **The Development of Carbon Nanotubes-Assisted Solid-Phase Microextraction for Fire Debris Analysis**  
*Ting-Yu Huang, MSc\**; *Jorn (Chi-Chung) Yu, PhD*

# CRIMINALISTICS

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- 11:30 AM – 1:00 PM    **B108**    **Trace Metal Profiling of Polymer Filaments Used in 3D Printing**  
*Thomas Gluodenis, PhD; John Stallworth\**
- 11:30 AM – 1:00 PM    **B109**    **The Elemental Analysis of Recently Manufactured Automotive Glasses and a Comparison of Data Processing Programs**  
*Seongshin Gwak, PhD\*; Dongkye Lee, PhD; Kiwook Kim, MS; Sangcheol Heo, MS; Seung-jin Ryu, PhD; Hyun Jee Kim, PhD*
- 11:30 AM – 1:00 PM    **B110**    **WITHDRAWN**
- 11:30 AM – 1:00 PM    **B111**    **The Forensic Analysis of 3D-Printed Polymers Using Direct Analysis in Real-Time Mass Spectrometry (DART®-MS)**  
*Jenna Covey, MSFS\*; Brian Musselman, PhD; Maria-Isabel Carnasciali, PhD; Brooke Kammrath, PhD*
- 11:30 AM – 1:00 PM    **B112**    **Improving the Delta-9-Tetrahydrocannabinol (delta-9-THC) Quantitative Measurements in Forensic Laboratories by The National Institute of Standards and Technology (NIST) CannaQAP**  
*Walter Wilson, PhD\*; Andrea Yarberry, PhD; Jerome Mulloor, MS*
- 11:30 AM – 1:00 PM    **B113**    **The Investigation and Quantitation Using Ultraviolet/Visible (UV/Vis) Spectrophotometry of the Products of the 4-Aminophenol Reaction With Cannabinoids**  
*Juliet Pearsall, BS\*; Marianne Staretz, PhD; Matthew Wood, PhD; Jeanne Berk, PhD*
- 11:30 AM – 1:00 PM    **B114**    **An Investigation of Organic Gunshot Residues by Direct Analysis in Real-Time Mass Spectrometry (DART®-MS)**  
*Thomas Ledergerber, BS\*; William Feeney, PhD; Edward Sisco, PhD; Luis Arroyo, PhD; Tatiana Trejos, PhD*
- 11:30 AM – 1:00 PM    **B115**    **A Mass Spectral Interpretation of Pinaca-Type Novel Psychoactive Substances (NPS)**  
*Christopher Poulos, BS\*; Glen Jackson, PhD*
- 11:30 AM – 1:00 PM    **B116**    **The Application of the Expert Algorithm for Substance Identification (EASI) on N-Alkanes**  
*Alexander Pfeffer, BS\*; Alexandra Adeoye, MS; Glen Jackson, PhD*
- 11:30 AM – 1:00 PM    **B117**    **The Influence of Instrument Parameters on Replicate Mass Spectra and Spectral Comparison Algorithms**  
*Isabel Galvez Valencia, BS\*; Glen Jackson, PhD*
- 11:30 AM – 1:00 PM    **B118**    **Boar Hunt or Manhunt? Fatality During Boar Hunting Expedition**  
*Andrea Costantino, MD\*; Naomi Iacoponi, MD\*; Julia Lazzari, MD; Alice Chiara Manetti, MD; Valentina Bugelli, MD, PhD; Paride Minervini; Marco Di Paolo, MD*
- 11:30 AM – 1:00 PM    **B119**    **The Quantitative Analysis of  $\Delta$ 9-Tetrahydrocannabinol ( $\Delta$ 9-THC) in Cannabis Plants Using the Fast Blue BB Colorimetric Test**  
*Nicole Valdes, MS\*; Roberta Gorziza, PhD; Jose Almirall, PhD*
- 11:30 AM – 1:00 PM    **B120**    **Open Fire**  
*Abigail Wilson, BS\*; Peter Diaczuk, PhD*
- 11:30 AM – 1:00 PM    **B121**    **Accounting for Household Substrates in a Model for Predicting the Weathering of Ignitable Liquids**  
*Max Denn, MS, BS\*; Glen Jackson, PhD*

# CRIMINALISTICS

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11:30 AM – 1:00 PM	<b>B122</b>	<b>The Qualitative Identification of Delta-8-Tetrahydrocannabinol (delta-8-THC) and Delta-9-Tetrahydrocannabinol (delta-9-THC) Using Thin-Layer Chromatography (TLC)</b> <i>Sara Moreno, BS*</i> ; <i>Emily Kell, BS</i> ; <i>Kimberly Burrow, BS</i> ; <i>Lauren Richards-Waugh, PhD</i>
11:30 AM – 1:00 PM	<b>B123</b>	<b>WITHDRAWN</b>
11:30 AM – 1:00 PM	<b>B124</b>	<b>The Raman Spectroscopic Analysis of Drugs in Contaminated Fingermarks: The Effect of Temperature and Time Since Deposition</b> <i>Mohamed Amin, MSc*</i> ; <i>Entesar Al-Hetlani, PhD</i> ; <i>Igor Lednev, PhD</i>
11:30 AM – 1:00 PM	<b>B125</b>	<b>The Tools, Resources, and Collaborative Research Used to Address Seized Drugs Measurement Challenges</b> <i>Edward Sisco, PhD*</i>

## Friday—Session I

### Next Generation Sequencing

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Moderator: Sheree Hughes

Co-Moderator: Charla Marshall

9:00 AM – 9:15 AM	<b>B126</b>	<b>One Laboratory's Experience With Next Generation Sequencing (NGS) Using the Verogen MiSeq® FGx System and Signature Prep Kit: The Decision, the Validation, and the Implementation</b> <i>Mandi Van Buren, MPharm*</i> ; <i>Brooke Ramirez, BS</i>
9:15 AM – 9:30 AM	<b>B127</b>	<b>The Internal Validation of Verogen ForenSeq™ DNA Signature Prep Kit Primer Set B Using the Hamilton Nimbus HD and MiSeq® FGx</b> <i>Mandi Van Buren, MPharm*</i> ; <i>Brooke Ramirez, BS</i>
9:30 AM – 9:45 AM	<b>B128</b>	<b>The Evaluation of the ForenSeq™ MainstAY Kit for Mixed Forensic DNA Samples</b> <i>Damani Johnson, BS*</i> ; <i>Lucio Avellaneda, BS</i> ; <i>Rachel Houston, PhD</i> ; <i>Tim Kalafut, PhD</i> (FSF Emerging Forensic Scientist Award Oral Presentation)
9:45 AM – 10:00 AM	<b>B129</b>	<b>The Identification of Trends of Sequenced-Based Allelic Drop-Out in Autosomal Short Tandem Repeats (STRs)</b> <i>Megan Foley, MSFS*</i> ; <i>Gerwald Koehler, PhD</i> ; <i>Jun Fu, PhD</i> ; <i>Robert Allen, PhD</i> ; <i>Jarrad Wagner, PhD</i>
10:00 AM – 10:15 AM	<b>B130</b>	<b>Determining Linkage Patterns for the Identity of Single Nucleotide Polymorphisms (SNPs) Found in Common Forensic Sequencing Assays</b> <i>Isabella George, BS*</i> ; <i>Daniele Podini, PhD</i> ; <i>Megan Foley, MSFS</i>
10:15 AM – 10:30 AM	<b>B131</b>	<b>Mitochondrial Genome Sequences From 6,025 Population Samples</b> <i>Charla Marshall, PhD*</i> ; <i>Kimberly Andreaggi, PhD</i> ; <i>Jennifer Higginbotham, MFS</i> ; <i>Elise Anderson, MSFS</i> ; <i>Walther Parson, PhD</i>
10:30 AM – 10:45 AM	<b>B132</b>	<b>Perceptions of Forensic Scientists on Statistical Models and Ethical Implications in DNA Evidence Evaluations Using Sequence Data</b> <i>Sanne Aalbers, MSc*</i> ; <i>Bruce Weir, PhD</i>
10:45 AM – 11:00 AM		<b>BREAK</b>



# CRIMINALISTICS

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## Forensic Genetic Genealogy

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Moderator: Sheree Hughes

Co-Moderator: Charla Marshall

- 11:00 AM – 11:15 AM    **B133**    **Trends in Profiles of Offenders Caught Using Forensic Genetic Genealogy (FGG)**  
*Will Vause, BA\*; Pamela Marshall, PhD*
- 11:15 AM – 11:30 AM    **B134**    **Solving More Cases Using Search Keys and Expanded DNA Indirect Matching (EDIM)**  
*Ray Wickenheiser, DPS, MBA\**
- 11:30 AM – 11:45 AM    **B135**    **The Impact of Manually Degraded Single Nucleotide Polymorphism (SNP) Microarray Data on GEDmatch Top Genetic Matches for Forensic Genetic Genealogy Purposes**  
*Justin Rivera, BS\*; Claire Glynn, PhD*
- 11:45 AM – 1:00 PM                            **BREAK**

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## Challenging and Non-Human Samples

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Moderator: Rachel Houston

Co-Moderator: Steven Lee

- 1:00 PM – 1:15 PM    **B136**    **Experimental Maceration on Human Bones: How Does It Impact the “Forens-OME”?**  
*Noemi Procopio, PhD\*; Andrea Bonicelli, PhD; Sheree Hughes, PhD*
- 1:15 PM – 1:30 PM    **B137**    **The Application of Ancient DNA Methodologies to Badly Burned Forensic Samples and Their Potential to Aid in the Identification and Analysis of Difficult Samples**  
*Cody Parker, PhD\*; Erin Rawls, BS; Amber Coffman, BS; Katelyn Bolhofner, PhD; Laura Fulginiti, PhD; Giovanna Vidoli, PhD; Joanne Devlin, PhD; Robert Oldt, BS; Sreetharan Kanthaswamy, PhD; Anne Stone, PhD*
- 1:30 PM – 1:45 PM    **B138**    **The Recovery of Human DNA From Fly Larvae**  
*Cesar Cantu, BS\*; Sibyl Bucheli, PhD; Rachel Houston, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 1:45 PM – 2:00 PM    **B139**    **The Progress on Obtaining Nuclear DNA Profiles From a Human Hair Shaft**  
*Elaine Lewis, PhD; Daniele Podini, PhD; Arely Parra López, BS\**
- 2:00 PM – 2:15 PM    **B140**    **The Development of a Next Generation Sequencing Panel Targeting Cannabinoid Synthase Genes to Distinguish Between Marijuana and Hemp**  
*Ya-Chih (Jessica) Cheng, MS\*; Rachel Houston, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 2:15 PM – 2:30 PM    **B141**    **The Intraspecies Variation of Commercially Available Kratom Products in Common DNA Barcode Regions**  
*Kari Graham, DPhil\*; Cesar Cantu, BS; Rachel Houston, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 2:30 PM – 2:45 PM    **B142**    **An investigation of Forensic Applications for Nanoplate-Based Digital Polymerase Chain Reaction (PCR)**  
*Mirna Ghemrawi, PhD\*; Nicole Fernandez-Tejero, MS; Alyssa Sanchez, BS; Bruce McCord, PhD*
- 2:45 PM – 3:00 PM    **B143**    **The Social Amoeba in Forensic Science: Microbial Fingerprinting and Epigenetics**  
*Andrea Alveshere, PhD\**
- 3:00 PM – 3:15 PM                            **BREAK**

# CRIMINALISTICS

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## In the Lab and in the Field

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Moderator: Kelly Knight

Co-Moderator: Baneshwar Singh

- 3:15 PM – 3:30 PM     **B144**     **Developing a Rapid DNA Response Plan for Mass Identification Events: An Inter-Laboratory Approach to Mobilizing a Forensic DNA Laboratory**  
*Dana DeVito, BS\**; *Amy McGuckian, MS*; *Julie Sikorsky, MS*; *Taylor Koepfler, MS*;  
*Jason Chute, MSFS*; *Kelly Beatty, MSFS*
- 3:30 PM – 3:45 PM     **B145**     **Toward a Rapid DNA Tool for Integrated Forensic Epigenetic Sample Preparation**  
*Rachelle Turiello, MS\**; *Renna Nouwairi, BS*; *Jordan Keller, BS*;  
*Francine Garrett-Bakelman, MD, PhD*; *James Landers, PhD*
- 3:45 PM – 4:00 PM     **B146**     **Discovering the Mysteries About Degradation of Extracted DNA From Trace Evidence When Stored in Different Conditions: State-of-the-Art and Future Perspectives**  
*Noemi Procopio, PhD\**; *Giulia Sguazzi, MA*; *Giulia Giappichini, MS*; *Chiara Cirioni, MS*;  
*Selena Cisana, PhD*; *Luciano Garofano, PhD*; *Paolo Garofano, MD, PhD*; *Pasquale Linarello*;  
*Monica Omedei, PhD*; *Luca Salvaderi, BSc*; *Debora Varrone, Sarah Gino, MD*
- 4:00 PM – 4:15 PM     **B147**     **Investigator® 24plex QS Amplification Kit Validation and Evaluation of New Formulation**  
*Samantha Wandzek, MS\**; *Jamie Haas, MS*; *Sapana Prajapati, BS*; *Alicia Cadenas, MS*
- 4:15 PM – 4:30 PM     **B148**     **The Development of a Five-Dye Insertion/Deletion (INDEL) Panel for Human Identification**  
*Lucio Avellaneda, BS\**; *Damani Johnson, BS*; *Rachel Houston, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 4:30 PM – 4:45 PM     **B149**     **The Status of the DNA Backlog in South Africa**  
*Antonel Olckers, PhD\**
- 4:45 PM – 5:00 PM     **B150**     **The Impact of Key Factors Absent in Forensic DNA Analysis in South Africa**  
*Antonel Olckers, PhD\**

## Friday—Session II

### Drugs II

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Moderator: Thaddeus Mostowtt

Co-Moderator: Carmen Masters

- 8:30 AM – 8:45 AM     **B151**     **Gas Chromatography-Vacuum Ultraviolet (GC-VUV) Detection of JWH-18 Positional Isomers and Select Diastereomeric Synthetic Cannabinoids**  
*Diana Le, BS\**; *Ira Lurie, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 8:45 AM – 9:00 AM     **B152**     **The Investigation of Analytical Methods Using Real-Time Mass Spectrometry for the Rapid Analysis of Seized Drugs**  
*Madeline Bloom, BS\**; *Edward Sisco, PhD*; *Ira Lurie, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 9:00 AM – 9:15 AM     **B153**     **The Investigation of Cannabidiol Conversion Into Delta-9-Tetrahydrocannabinol in Electronic Cigarettes**  
*Laerissa Reveil, MS\**; *Justin Poklis, BS*; *Matthew S. Halquist, PhD*; *Michelle Peace, PhD*

# CRIMINALISTICS

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9:15 AM – 9:30 AM	<b>B154</b>	<b>The Nanogram Level Detection of Five Illicit Drugs Using the Ion Mobility Spectrometer: A Field-Testing Report</b> <i>John Wang, PhD*; Rong Zhang, PhD</i>
9:30 AM – 9:45 AM	<b>B155</b>	<b>A Quantitative Determination of Four Designer Benzodiazepines by High-Performance Thin-Layer Chromatography (HPTLC)</b> <i>Isabella Iorio, BS*; Thomas Brettell, PhD; Marianne Staretz, PhD; Matthew Wood, PhD</i>
9:45 AM – 10:00 AM	<b>B156</b>	<b>The Separation of Lysergic Acid Diethylamide (LSD) and its Analogs by High-Performance Thin-Layer Chromatography (HPTLC)</b> <i>Tori Schaffer, BS*; Sandra Rodriguez-Cruz, PhD; Jeanne Berk, PhD; Thomas Brettell, PhD</i>
10:00 AM – 10:15 AM	<b>B157</b>	<b>The Conversion of Cannabidiol to Delta-9-Tetrahydrocannabinol (delta-9-THC) During Gas Chromatography/Mass Spectrometry (GC/MS) Analysis</b> <i>Sarah Shuda, MSFS*; Barry Logan, PhD</i>
10:15 AM – 10:30 AM	<b>B158</b>	<b>The Utility of Flip-Flop Chromatography Employing Silica Hydride Stationary Phases With Diode Array Ultraviolet and Single Quadrupole Mass Spectrometric Detection for the Analysis of Seized Drugs</b> <i>Volda Appia-Kusi, BS*; Ira Lurie, PhD</i>
10:30 AM – 10:45 AM	<b>B159</b>	<b>The Evaluation of Fentanyl and Fentanyl-Related Compounds on United States Paper Currency</b> <i>Matthew Hewes, MS*; Alex Krotulski, PhD; Donna Papsun, MS; Barry Logan, PhD</i>
10:45 AM – 11:00 AM		<b>BREAK</b>

## Canines and Guns

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Moderator: Ann Geisendorfer

Co-Moderator: Carolyn Hudson

11:00 AM – 11:15 AM	<b>B160</b>	<b>The Chemical Analysis of the Surface Building Collapse Samples: Updating Decontamination Protocols for Search and Rescue Canines</b> <i>Michelle Karpinsky, BS*; Lauryn DeGreeff, PhD; Erin Perry, MS, PhD</i>
11:15 AM – 11:30 AM	<b>B161</b>	<b>The Development of a Safe Canine Training Aid Mimic for Fentanyl</b> <i>Leann Forte, MS*; Howard Holness, PhD; Kenneth Furton, PhD; Lauryn DeGreeff, PhD</i>
11:30 AM – 11:45 AM	<b>B162</b>	<b>A Two-Step Method for the Identification and Highly Specific Analysis of Organic Gunshot Residue Using Raman and Laser-Induced Breakdown Spectroscopies</b> <i>Igor Lednev, PhD*; Shelby Khandasammy, BS; Lenka Halamkova, PhD; Matthieu Baudelet, PhD</i>
11:45 AM – 12:00 PM	<b>B163</b>	<b>Sourcing Glass Traces on Bullets as Additional Evidence for Shooting Reconstruction</b> <i>Crystal Rosales, BS*; Gwyneth Gordon, PhD; Kyle Mueller, MS; Maia Nguyen, MPS; Shirley Montero, PhD</i>
12:00 PM – 1:00 PM		<b>BREAK</b>

# CRIMINALISTICS

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## Friction Ridge

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Moderator: Claudine Pereira

Co-Moderator: Robin Ruth

- 1:00 PM – 1:15 PM     **B164**     **The Critical Evaluation of Various Classification Systems of Lip Prints**  
*Mukesh Thakar, PhD\**; *Jagmeet Kaur, MSc*
- 1:15 PM – 1:30 PM     **B165**     **The Development of Latent Fingerprints on a Cigarette Using Ruthenium Tetroxide**  
*Young-Il Seo, MS\**; *Jiho Seo, MS*; *Byung-sun Moon, PhD*; *Nam-Kyu Park, PhD*
- 1:30 PM – 1:45 PM     **B166**     **Quantitative Measurements for Fingerprint Quality Determination**  
*Hoyong Yie, ME\**; *Byung-sun Moon, PhD*; *Nam-Kyu Park, PhD*; *Young-Il Seo, MS*
- 1:45 PM – 2:00 PM     **B167**     **The Standardization Process of the Fingerprint Profession: The European Approach**  
*Aldo Mattei, PhD, MSc\**
- 2:00 PM – 2:15 PM     **B168**     **The Effect of Smoking, Tobacco Chewing, and Various Pathological Conditions on Lip Prints**  
*Jagmeet Kaur, MSc\**; *Mukesh Thakar, PhD*
- 2:15 PM – 2:30 PM     **B169**     **The Discrimination of Smokers and Non-Smokers Based on the Analysis of Fingermarks Using Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR) Spectroscopy and Chemometrics**  
*Mohamed Amin, MSc\**; *Entesar Al-Hetlani, PhD*; *Igor Lednev, PhD*
- 2:30 PM – 3:00 PM     **BREAK**

## Paint, Hair, Fibers, and Tires

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Moderator: Agnes Winoker

Co-Moderator: Vincent Villena

- 3:00 PM – 3:15 PM     **B170**     **The Effect of Elevated Temperatures on the Microscopical Identification of Vegetable Fibers**  
*Walter Rowe, PhD\**
- 3:15 PM – 3:30 PM     **B171**     **Optimal Machine Learning Model Selection on Tire Classification**  
*Amir Alipour Yengejeh, PhD\**; *Larry Tang, PhD*; *John Lucchi, MS*; *Matthieu Baudelet, PhD*
- 3:30 PM – 3:45 PM     **B172**     **Wrestling With the Evaluation of Fiber Evidence: Transfer and Persistence Modeled Through Jiu-Jitsu Activities**  
*Victoria Lau, MSc\**; *Claude Roux, PhD*; *Xanthe Spindler, PhD*
- 3:45 PM – 4:00 PM     **B173**     **A Chemical Approach to Tire Mark Analysis**  
*John Lucchi, MS\**; *Matthieu Baudelet, PhD*
- 4:00 PM – 4:15 PM     **B174**     **Image Analysis and Neural Networks Techniques for Hair Examinations**  
*David H. Funes, MS\**; *Candice Bridge, PhD*
- 4:15 PM – 4:30 PM     **B175**     **The Microscopical Recognition and Characterization of Pigmented Fibers**  
*Kelly Brinsko Beckert, BS, MS*; *Otyllia Abraham, BS, MS*; *Ethan Groves, BS*; *Skip Palenik, BS*; *Christopher Palenik, MS, PhD\**

# CRIMINALISTICS

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- 4:30 PM – 4:45 PM     **B176**     **An Analysis of Automotive Paint Layers on Plastic Substrates Using Chemical Imaging Fourier Transform Infrared (FTIR) Microscopy**  
*James Cizdziel, PhD; Kendall Wontor, MPharm\*; Carly Clisham, BS*
- 4:45 PM – 5:00 PM     **B177**     **Combatting Illegal Logging Through the Use of Direct Analysis in Real-Time High Resolution Mass Spectrometry (DART®-HRMS) and Statistical Logarithms**  
*Mónica Ventura, BS\*; Samira Beyramysoltan, PhD; Benedetta Garosi, BS; Meghan Appley, PhD; Edgard Espinoza, PhD; Rabi Musah, PhD*
- 5:00 PM – 5:15 PM     **B178**     **Electrochemical Characterization of Common Cutting Agents in Illicit Drugs**  
*George Hedlund, BS\*, Frederique T. Deiss, PhD*

# DIGITAL & MULTIMEDIA SCIENCES

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## Thursday

### What Happened Last Night?—Audio, Video, and Image Analysis

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Moderator: J. Levi White

Co-Moderator: Umit Karbiyik

- |                    |           |   |
|--------------------|-----------|---|
| 8:30 AM – 8:50 AM  | <b>C1</b> | <b>A Lossy Compression Analysis of GoPro® Audios Before and After YouTube Laundry</b><br><i>Stephen Wells, MSc*</i> ; <i>Catalin Grigoras, PhD</i> ; <i>Gregory Wales, MSc</i> ; <i>Cole Whitecotton, MSc</i> |
| 8:50 AM – 9:10 AM  | <b>C2</b> | <b>Can You Accurately Determine Clothing Tones in Infrared Closed-Circuit Television (CCTV) Imagery?</b><br><i>Cole Whitecotton, MSc</i> ; <i>Gretchel Lomboy, MS*</i> ; <i>James Zjalic, MSc</i>             |
| 9:10 AM – 9:30 AM  | <b>C3</b> | <b>Digital Reality: Light Reflection vs. Gunfire Muzzle Flashes</b><br><i>Barry Dickey*</i> ; <i>Gil Sapir, JD, MSc</i>   |
| 9:30 AM – 9:50 AM  | <b>C4</b> | <b>An Investigation of Closed-Circuit Television (CCTV) Footage for the Detection of Facial Features</b><br><i>Lovepreet Kaur, MSc*</i> ; <i>Mukesh Thakar, PhD</i> ; <i>Navdeep Goel, PhD</i>                |
| 9:50 AM – 10:00 AM |           | <b>BREAK</b>  |

### It Wasn't Me! I Swear, I Didn't Know!—Identification, Verification, and Age Estimation

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Moderator: Patrick Eller

Co-Moderator: Irfan Ahmed

- |                     |           |   |
|---------------------|-----------|---|
| 10:00 AM – 10:25 AM | <b>C5</b> | <b>An Overview of Facial Identification as a Forensic Discipline</b><br><i>Steven Johnson, BS*</i>  |
| 10:25 AM – 10:45 AM | <b>C6</b> | <b>The Application of TPS Software in Ear Print Identification: Matching/Non-Matching of the Ear Photograph and Ear Print</b><br><i>Deepika Rani, MSc*</i> ; <i>Kewal Krishan, PhD</i>                        |
| 10:45 AM – 11:05 AM | <b>C7</b> | <b>Exploring Bias in Estimating the Age of Subadults in Images</b><br><i>Petra Urbanova, PhD*</i>   |
| 11:05 AM – 11:25 AM | <b>C8</b> | <b>Multimedia Stream Hashing: A Forensic Method for Content Validation and Verification</b><br><i>Gregory Wales, MSc*</i> ; <i>Jeff Smith, MS*</i> ; <i>Douglas Lacey, MS*</i> ; <i>Catalin Grigoras, PhD</i> |
| 11:25 AM – 11:45 AM | <b>C9</b> | <b>Source Camera Identification on Multi-Camera Phones</b><br><i>Stephanie Reinders, PhD*</i> ; <i>Danica Ommen, PhD</i> ; <i>Alicia Carriquiry, PhD</i>  |
| 11:45 AM – 1:00 PM  |           | <b>BREAK</b>  |

# DIGITAL & MULTIMEDIA SCIENCES

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## No More Secrets—Social Networking and Mobile Device Analysis

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Moderator: Alexander Nelson

Co-Moderator: Gregory Wales

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|-------------------|------------|---|
| 1:00 PM – 1:20 PM | <b>C10</b> | <b>A Forensic Analysis of Android™-Popular Social Networking Apps</b><br><i>Chen Shi, PhD*</i> ; <i>Yong Guan, PhD</i>  |
| 1:20 PM – 1:40 PM | <b>C11</b> | <b>TikTok From an Open-Source Intelligence (OSINT) Perspective: Lessons Learned</b><br><i>Marcus Rogers, PhD*</i> ; <i>Nina Matulis, BS</i>   |
| 1:40 PM – 2:05 PM | <b>C12</b> | <b>The Analysis of Sysdiagnose in iOS® 15 to Identify the Sending Phone Number of Airdrop Data</b><br><i>Brandon Epstein, MS*</i> ; <i>Benjamin Klein, BA*</i> ; <i>Derek Feuerstein, BS*</i> |
| 2:05 PM – 2:25 PM | <b>C13</b> | <b>Cyber Forensic Investigations of Web3 Cryptocurrency Wallets on iOS® and Android™</b><br><i>Mohammad Meraj Mirza, MS*</i> ; <i>Akif Ozer*</i> ; <i>Umit Karabiyik, PhD</i>                 |
| 2:25 PM – 2:35 PM |            | <b>BREAK</b>  |

## Yes, More Secrets—Cryptography, Memory, and Hidden Data

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Moderator: Andrew Crouse

Co-Moderator: Mary Adedayo

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|-------------------|------------|---|
| 2:35 PM – 2:55 PM | <b>C14</b> | <b>Cryptographic Techniques in Digital Forensics</b><br><i>Taiwo Ogunseyi, PhD*</i> ; <i>Oluwasola Adedayo, PhD*</i>  |
| 2:55 PM – 3:20 PM | <b>C15</b> | <b>Leveraging Memory Forensics Artifacts for Android™ Malware Classification</b><br><i>Aisha Ali-Gombe, PhD*</i> ; <i>Sneha Sudhakaran, PhD</i> ; <i>Golden Richard, PhD</i>                                    |
| 3:20 PM – 3:45 PM | <b>C16</b> | <b>Going Beyond Forensics With Virtual Private Network (VPN) Application Fingerprinting</b><br><i>Shinelle Hutchinson*</i> ; <i>Blake Anderson, PhD</i> ; <i>Umit Karabiyik, PhD</i> ; <i>David McGrew, PhD</i> |
| 3:45 PM – 4:05 PM | <b>C17</b> | <b>Unlocking the Audit Trail of an Unsupported Programmable Deadbolt Lock</b><br><i>Nicole Odom, MSFS*</i>  |
| 4:05 PM – 4:45 PM | <b>C18</b> | <b>WITHDRAWN</b>  |

## Poster Session

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|--------------------|------------|--|
| 11:30 AM – 1:00 PM | <b>C19</b> | <b>Facial Recognition Searches Using Postmortem Images</b><br><i>Ella Uren, BS*</i> ; <i>Kelcy McArthur, MA*</i> ; <i>Krystal Howard, MSW</i> ; <i>Jennifer Coulson, BA</i> ; <i>Jane Harris, PhD</i>  |
| 11:30 AM – 1:00 PM | <b>C20</b> | <b>A Likelihood Ratio Approach for Detecting Behavioral Changes in Device Usage Over Time</b><br><i>Rachel Longjohn, MS*</i> ; <i>Padhraic Smyth, PhD</i>  |
| 11:30 AM – 1:00 PM | <b>C21</b> | <b>Artificial Intelligence Technologies in Age Estimation: The State-of-the-Art</b><br><i>Salvatore Rocuzzo, MD*</i> ; <i>Aldo Liberto, MD</i> ; <i>Elisa Pappalardo, MD</i> ; <i>Sabrina Franco, MD</i> ; <i>Mario Chisari, MD</i> ; <i>Massimiliano Esposito, MD</i> |

# DIGITAL & MULTIMEDIA SCIENCES

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## Friday

### And Boom Goes the (Dynamite) Data Explosion—Data Sets, Databases, and Forensic Tool Testing

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Moderator: Jason Lewis

Co-Moderator: Cole Whitecotton

8:45 AM – 9:05 AM	<b>C22</b>	<b>Computer Forensics Reference Data Sets (CFReDS) for Digital Evidence</b> <i>Rick Ayers, MS; Mehdi Shahid, MS; Barbara Guttman, BA*</i>
9:05 AM – 9:25 AM	<b>C23</b>	<b>The Discovery of Digital Forensic Dataset Characteristics With CASE-Corpora</b> <i>Alex Nelson, PhD*; Eoghan Casey, PhD</i>
9:25 AM – 9:45 AM	<b>C24</b>	<b>Manipulating the National Institute of Standards and Technology (NIST) National Software Reference Library SQLite Metadata Sets</b> <i>Douglas White, MS*; Austin Snelick, BS*</i>
9:45 AM – 10:10 AM	<b>C25</b>	<b>Computer Forensics Tool Testing (CFTT) Cloud Artifact Extraction Tools</b> <i>James Lyle, PhD*; Richard Ayers, MS; Barbara Guttman, BA</i>
10:10 AM – 10:20 AM		<b>BREAK</b>

### All You Need Is (Love) Standards, Policies, and Procedures

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Moderator: Thomas Moore

Co-Moderator: Gary Daniel

10:20 AM – 10:40 AM	<b>C26</b>	<b>Standards Development Activities in Digital and Multimedia Forensic Sciences</b> <i>Tracy Walraven, MFS*</i>
10:40 AM – 11:00 AM	<b>C27</b>	<b>Escaping the Monolithic Architecture for Digital Forensics and Incident Response Systems Using a Microservices Approach</b> <i>Mohammad Meraj Mirza, MS*; Rwitam Bandyopadhyay, BS; Akif Ozer; Bharath Vemula, MS; Umit Karabiyik, PhD*; Marcus Rogers, PhD*</i>
11:00 AM – 11:25 AM	<b>C28</b>	<b>Disambiguating “Ground Truth” for Forensic Applications in Artificial Intelligence</b> <i>Cristina Aggazzotti, PhD*; E. Allyn Smith, PhD*</i>
11:25 AM – 11:45 AM	<b>C29</b>	<b>Comparing Defense Attorneys’ and Prosecutors’ Knowledge of Digital Evidence</b> <i>Danielle Crimmins, PhD*; Kathryn Seigfried-Spellar, PhD; Marcus Rogers, PhD</i>
11:45 AM – 1:05 PM		<b>BREAK</b>



# DIGITAL & MULTIMEDIA SCIENCES

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## Multidisciplinary Session: Digital & Multimedia Sciences and Engineering & Applied Sciences The Next 75 Years—The Application of Technology/DMS to the Forensic Sciences

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Moderator: *J. Levi White*

Co-Moderator: *Christina Malone*

1:05 PM – 1:30 PM	<b>C30</b>	<b>The Possibilities of Artificial Intelligence in Digital and Multimedia Sciences AI4Forensics</b> <i>Zeno Geradts, PhD*</i>
1:30 PM – 1:50 PM	<b>C31</b>	<b>The Implementation and Testing of Triplet Convolutional Neural Networks for Forensic Image Matching: Phase I—Setting Up the Algorithm</b> <i>Brahmani Reddy Aileni, BS; Sharon Derrick, PhD*; Ruby Mehrubeoglu, PhD</i>
1:50 PM – 2:10 PM	<b>D37</b>	<b>On-Board Video Analysis Is Used to Defend a Truck Operator in the Case of a Pedestrian Killed in the Crosswalk</b> <i>Kurt Weiss, MS*</i>
2:10 PM – 2:30 PM	<b>D38</b>	<b>Research on the Deep Learning-Based Arc Melting Mark Detection Technique</b> <i>Lim Kyu-Young, MS*</i>
2:30 PM – 2:50 PM	<b>D39</b>	<b>Video Analysis Helps Defend Municipality in Bicyclist's Impact With a Truck</b> <i>Kurt Weiss, MS*</i>
2:50 PM – 3:00 PM		<b>BREAK</b>
3:00 PM – 3:20 PM	<b>C32</b>	<b>A Universal Disaster Victim Identification Digital Tool for the Management of Fragmented Cross-Jurisdictional Missing Persons' Lists and Antemortem Data in Mass Disasters With Multinational Victims</b> <i>Shada Alsalamah, PhD*; Afrah Alotaibi, MSc; Sakher Al-Qahtani, PhD*</i>
3:20 PM – 3:40 PM	<b>C33</b>	<b>Augmented Reality Applications for Craniofacial Reconstruction and Fracture Margin Assessment in Forensic Anthropology</b> <i>Katharine Kolpan, PhD*; Jeffrey Vadala, PhD</i>
3:40 PM – 4:00 PM	<b>D40</b>	<b>Forensic Human Identification From Facial and Cranial Images Using Deep Learning</b> <i>Mario Villar, BS; Andrea Valsecchi, PhD; Pablo Mesejo, PhD*</i>
4:00 PM – 4:20 PM	<b>C34</b>	<b>Potentialities of the Anatomage Table in Forensic Training and Education Programs</b> <i>Emilio Nuzzolese, PhD*; Corrado Calì, PhD; Giancarlo Di Vella, PhD</i>

# ENGINEERING & APPLIED SCIENCES

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## Wednesday

### Poster Session

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- 11:30 AM – 1:00 PM    **D1**    **The Design of a Centrifugal Microfluidic Disc for the Deamination of Cytosines for Forensic Epigenetics**  
*Jordan Keller, BS\**; *Rachelle Turiello, MS*; *Renna Nouwairi, BS*; *James Landers, PhD*
- 11:30 AM – 1:00 PM    **D2**    **A Preliminary Machine Learning Study for Short Tandem Repeats (STRs) Profile Completion**  
*Ciro Di Nunzio, BS\**; *Aldo Di Nunzio, MS\**; *Michele Di Nunzio, MSc\**; *Autilia Vitiello, PhD\**; *Giovanni Acampora, PhD\**
- 11:30 AM – 1:00 PM    **D3**    **Temperature Profiling and Quantitative Analysis of Disperse Dyes in Polyester Via Direct Analysis in Real-Time Mass Spectrometry (DART®-MS)**  
*Zoe Millbern, BS\**; *Nelson Vinueza, PhD*
- 11:30 AM – 1:00 PM    **D4**    **A Study on the Application of a Human Model for the Analysis of a Fall From Height**  
*Chan-Seong Park, PhD\**

## Thursday

### Forensic and Applied Sciences

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Moderator: Kurt Weiss

Co-Moderator: Darren Franck

- 8:30 AM – 9:00 AM    **D5**    **The Differential Performance of Dynamic Vapor Microextraction for Recovery of Ignitable Liquid Compounds Investigated Within a Sensitivity Analysis**  
*Jennifer Berry, PhD\**; *Mary Gregg, PhD*; *Amanda Koepke, PhD*; *Kavita Jeerage, PhD*
- 9:00 AM – 9:30 AM    **D6**    **Water Modeling of River Streams as a Tool for the Delimitation of Areas of Potential Disposal Sites of Missing Persons' Bodies**  
*Luz Perez, PhD*; *Ana Carolina Guatame, MSc\**; *Jorge Escobar, PhD\**; *David Trujillo, MSc*
- 9:30 AM – 9:45 AM    **D7**    **The Perils of Using Linear Analysis for Metal Component Failures**  
*Bart Kemper, BSME\**
- 9:45 AM – 10:00 AM    **D8**    **The Effects of Land and Grooves on the Trajectory of a 9mm Bullet in a Denser Medium**  
*Ali Shahid Hussain, BS\**
- 10:00 AM – 10:15 AM    **BREAK**
- 10:15 AM – 10:35 AM    **D9**    **Guessing the Twist of the Rifling of the 9mm Pistol From the Cartridge Case**  
*Ali Shahid Hussain, BS\**
- 10:35 AM – 10:50 AM    **D10**    **When Poor Knowledge of Basic Physics Results in Useless Trials**  
*Alessandro Ferrero, MSc\**; *Veronica Scotti, MJ*
- 10:50 AM – 11:05 AM    **D11**    **A Haystack Falls and Injures a Dairy Farm Worker: Forensic Testing Used to Determine the Force Required to Topple the Stack**  
*Kurt Weiss, MS\**

# ENGINEERING & APPLIED SCIENCES

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11:05 AM – 11:35 AM	<b>D12</b>	<b>Satellite Laboratories at the Front Line: The Canadian Border Approach to Narcotics Detection Within Postal and Air Cargo Facilities</b> <i>Sandra Ferreira, MS*; Chad Maheux, MS, MPA*</i>
11:35 AM – 11:50 AM	<b>D13</b>	<b>Identification on the Basis of Chamber Marks of .30 Caliber Firearms</b> <i>Ali Shahid Hussain, BS*</i>
11:50 AM – 1:00 PM		<b>BREAK</b>

## Linguistics

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Moderator: *Darren Franck*

Co-Moderator: *Kurt Weiss*

1:00 PM – 1:20 PM	<b>D14</b>	<b>Testing Basic Toolkits for Forensic Text Analysis: Lemmatizers</b> <i>Carole Chaski, PhD*; Angela Almela, PhD; Pascual Cantos, PhD</i>
1:20 PM – 1:40 PM	<b>D15</b>	<b>True and False Sexual Assault Victim Statements</b> <i>Carole Chaski, PhD*</i>
1:40 PM – 2:00 PM	<b>D16</b>	<b>Validation Testing of a Syntactic Authorship Identification Method Using Ground-Truth Data From 25 Authors</b> <i>Angela Almela, PhD*</i>
2:00 PM – 2:15 PM		<b>BREAK</b>

## Vehicles Collisions and Safety Standards

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Moderator: *Harold Franck*

Co-Moderator: *Michelle Hoffman*

2:15 PM – 2:30 PM	<b>D17</b>	<b>Recreational Vehicle (RV) Crashworthiness: Enhanced Injury Caused by Unsafe Vehicle Interior Structures Combined With Predictable Seat and Belt Failures</b> <i>Mark Pozzi, MS*; Vijay Gupta, PhD; Jack Bish, PhD</i>
2:30 PM – 2:45 PM	<b>D18</b>	<b>The Mechanics of All-Terrain Vehicle (ATV) Rollovers</b> <i>David Pienkowski, PhD*</i>
2:45 PM – 3:05 PM	<b>D19</b>	<b>Rear Impact Crashworthiness Defects Proven by Forensic Analysis and Testing: Failures of Seats, Head Restraints, and Belts</b> <i>Mark Pozzi, MS*; Paul Lewis, MS; Kenneth Saczalski, PhD</i>
3:05 PM – 3:25 PM	<b>D20</b>	<b>Child Fatalities in Vehicular Rear Impact: Forensic Analysis and Testing to Scientifically Prove Seat and Belt Failures</b> <i>Mark Pozzi, MS*; Kenneth Saczalski, PhD; Todd Saczalski, BSMET</i>
3:25 PM – 3:40 PM		<b>BREAK</b>
3:40 PM – 4:00 PM	<b>D21</b>	<b>The Effectiveness of Roadside Barriers in Reducing Accident Severity</b> <i>Darren Franck, MSME*; Harold Franck, MSEE</i>

# ENGINEERING & APPLIED SCIENCES

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- 4:00 PM – 4:15 PM     **D22**     **Elderly Female Side Impact: An Experimental Analysis of Side Impact Injuries Using Instrumented Postmortem Human Subjects (PMHS), Current Restraint Technologies, and Real-World Crash Boundary Conditions**  
*John Bolte, PhD\**; *Amanda Agnew, PhD*; *Yun-Seok Kang, PhD*
- 4:15 PM – 4:30 PM     **D23**     **Event Data Recorder (EDR) Data and Restraint Use: A Case Study**  
*Michelle Hoffman, MS\**
- 4:30 PM – 4:45 PM     **D24**     **Criminal Engineering: The Ugly 50-Year History of Federal Motor Vehicle Safety Standard (FMVSS) 207 and Proposals for an Upgraded Safety Standard That Will Prevent Catastrophic Injury and Death**  
*Mark Pozzi, MS\**; *Kenneth Saczalski, PhD*

## Poster Session

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- 11:30 AM – 1:00 PM     **D25**     **Reverse Engineering Techniques in Forensic Investigations: A New Approach to Bitemark Analysis**  
*Enrica Macorano, MD\**; *Valeria Santoro, PhD*; *Mariagrazia Calvano, MD*;  
*Federica Mele, MD*; *Mirko Leonardelli, MD*; *Stefano Duma, MD*; *Giovanni De Gabriele, MD*;  
*Luigi Maria Galantucci, PhD*; *Francesco Introna, MD*
- 11:30 AM – 1:00 PM     **D26**     **Microfluidics: Streamlining Ink Identification Using Mass Spectrometry**  
*Morgan Demmler, MS\**; *Nelson Vinueza, PhD*
- 11:30 AM – 1:00 PM     **D27**     **Deep Learning Models to Estimate Age and Sex From Images of the Pubic Symphyseal Surface and Greater Sciatic Notch**  
*Hyun Jin Park, PhD\**; *Kyubaek Yoon, MS*; *Jongeun Choi, PhD*; *Eun Jin Woo, PhD*;  
*Kyung-Seok Hu, DDS, PhD*
- 11:30 AM – 1:00 PM     **D28**     **A Study of a Method for Estimating Mechanism of Injury to Children Caused by External Force: Collisions of Children With the Floor**  
*Taiki Watamabe, BEng\**; *Yasumi Ito, PhD*; *Yuki Kunugi, BEng*; *Issei Watanabe, BEng*;  
*Ryuichi Yamada, PhD*; *Yoshiyuki Kagiyama, PhD*; *Tetsuya Nemoto, PhD*; *Kosuke Kurata, MS*;  
*Toshiyuki Harama, BEng*
- 11:30 AM – 1:00 PM     **D29**     **The Magnetic Recovery and Mass Spectrometric Analysis of Fingermarks Contaminated With Cosmetics Products**  
*Entesar Al-Hetlani, PhD\**; *Sara Al-Sayed, BSc*; *Mohamed Amin, MSc*
- 11:30 AM – 1:00 PM     **D30**     **The Application of Environmental Design Principles in Preventing Crime and Reducing Fear of Crime in Cities: The Case of Kocaeli, Turkey**  
*Tugba Unsal Sapan, PhD\**; *Busra Ozen, BArch\**; *Sevil Atasoy, PhD*
- 11:30 AM – 1:00 PM     **D31**     **Generalized Cosine Similarity for Mass Spectral Comparisons**  
*Anthony Kearsley, PhD\**; *Arun Moorthy, PhD*; *Matthew Roberts, PhD*; *Edward Sisco, PhD*

# ENGINEERING & APPLIED SCIENCES

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## Friday—Session I

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

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Moderator: Jamie Ferrell

Co-Moderator: Kurt Weiss

- 8:30 AM – 8:45 AM    **E17**    **Nursing and Engineering Partnerships Lead to Important Advances**  
*Joyce Williams, DNP\**
- 8:45 AM – 9:00 AM    **D32**    **Rapid Isolation of Sperm From Sexual Assault Case-Type Samples Utilizing a Microfluidic Device**  
*Kathryn Stephens, PhD\*; Adam Bisogni, PhD; Gothami Padmabandu, MS; Joana Antunes, PhD; Harvey Tian, PhD; Richelle Barta, BS*
- 9:00 AM – 9:15 AM    **E18**    **Identifying Information in Protein From Sexual Assault Evidence**  
*Glendon Parker, PhD\*; Victoria Montgomery, MSc*
- 9:15 AM – 9:30 AM    **D33**    **The Detection of Saliva Stains Using Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR) Spectroscopy: The Effect of Surface and Time**  
*Entesar Al-Hetlani, PhD\*; Dalal Al-Sharji, MSc; Mohamed Amin, MSc; Igor Lednev, PhD*
- 9:30 AM – 9:45 AM    **E19**    **Right Under Our Noses: Understanding Missed Opportunities for the Collection of Saliva as Evidence**  
*Diana Faugno, MSN\*; Jessica Volz, DNP\**
- 9:45 AM – 10:00 AM    **BREAK**

Moderator: Jamie Ferrell

Co-Moderator: Kurt Weiss

- 10:00 AM – 10:15 AM    **D34**    **Wheelchair User Sues Pharmacy for Access as a Violation of the Americans With Disabilities Act**  
*Robert Lynch, BArch\**
- 10:15 AM – 10:30 AM    **E20**    **Long-Term Care Facilities (LTCFs) and Nursing Homes (NH) SARS-COV2 Infections: Inevitable Conditions or Medical Malpractice?**  
*Domenicantonio Iannello\*; Elena Forzese\*; Gennaro Baldino, MD; Daniela Sapienza; Alessio Asmundo; Chiara Stassi; Elvira Ventura Spagnolo, MD, PhD; Cristina Mondello, MD, PhD\**
- 10:30 AM – 11:00 AM    **D35**    **Electrical Injury Evidence and Sequelae**  
*Helmut Brosz, BASc\**
- 11:00 AM – 11:15 AM    **E21**    **A Descriptive Study of Non-Fatal Strangulation in Sexual Assault**  
*Julie Valentine, PhD, MSN\*; Brooke Stacey, BSN\*; Leslie Miles, DNP*
- 11:15 AM – 11:30 AM    **D36**    **Failure of Suture Materials Used for a Cesarean Section**  
*Sarah Hainsworth, BEng, PhD\**
- 11:30 AM – 11:45 AM    **E11**    **A Collaborative Artificial Intelligence Platform for Bruise Age Analysis**  
*Katherine Scafide, PhD, RN\*; David Lattanzi, PhD, PE\*; Janusz Wojtusiak, PhD*
- 11:45 AM – 12:00 PM    **Questions & Answers**

# ENGINEERING & APPLIED SCIENCES

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## Multidisciplinary Session: Digital & Multimedia Sciences and Engineering & Applied Sciences The Next 75 Years—The Application of Technology/DMS to the Forensic Sciences

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Moderator: *J. Levi White*

Co-Moderator: *Christina Malone*

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|-------------------|------------|--|
| 1:05 PM – 1:30 PM | <b>C30</b> | <b>The Possibilities of Artificial Intelligence in Digital and Multimedia Sciences AI4Forensics</b><br><i>Zeno Geradts, PhD*</i>   |
| 1:30 PM – 1:50 PM | <b>C31</b> | <b>The Implementation and Testing of Triplet Convolutional Neural Networks for Forensic Image Matching: Phase I—Setting Up the Algorithm</b><br><i>Brahmani Reddy Aileni, BS; Sharon Derrick, PhD*; Ruby Mehrubeoglu, PhD</i>  |
| 1:50 PM – 2:10 PM | <b>D37</b> | <b>On-Board Video Analysis Is Used to Defend a Truck Operator in the Case of a Pedestrian Killed in the Crosswalk</b><br><i>Kurt Weiss, MS*</i>  |
| 2:10 PM – 2:30 PM | <b>D38</b> | <b>Research on the Deep Learning-Based Arc Melting Mark Detection Technique</b><br><i>Lim Kyu-Young, MS*</i>   |
| 2:30 PM – 2:50 PM | <b>D39</b> | <b>Video Analysis Helps Defend Municipality in Bicyclist’s Impact With a Truck</b><br><i>Kurt Weiss, MS*</i>   |
| 2:50 PM – 3:00 PM |            | <b>BREAK</b>   |
| 3:00 PM – 3:20 PM | <b>C32</b> | <b>A Universal Disaster Victim Identification Digital Tool for the Management of Fragmented Cross-Jurisdictional Missing Persons’ Lists and Antemortem Data in Mass Disasters With Multinational Victims</b><br><i>Shada Alsalamah, PhD*; Afrah Alotaibi, MSc; Sakher Al-Qahtani, PhD*</i> |
| 3:20 PM – 3:40 PM | <b>C33</b> | <b>Augmented Reality Applications for Craniofacial Reconstruction and Fracture Margin Assessment in Forensic Anthropology</b><br><i>Katharine Kolpan, PhD*; Jeffrey Vadala, PhD</i>  |
| 3:40 PM – 4:00 PM | <b>D40</b> | <b>Forensic Human Identification From Facial and Cranial Images Using Deep Learning</b><br><i>Mario Villar, BS; Andrea Valsecchi, PhD; Pablo Mesejo, PhD*</i>  |
| 4:00 PM – 4:20 PM | <b>C34</b> | <b>Potentialities of the Anatomage Table in Forensic Training and Education Programs</b><br><i>Emilio Nuzzolese, PhD*; Corrado Cali, PhD; Giancarlo Di Vella, PhD</i>  |

# FORENSIC NURSING SCIENCE

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## Wednesday

### Poster Session

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- 11:00 AM – 1:30 PM    **E1**    **A Scoping Review to Define Sexual Coercion Post-2016**  
*Patricia Speck, DNSc\**
- 11:00 AM – 1:30 PM    **E2**    **Are Nursing Students Prepared to Recognize Violence Against Children? The Evaluation of an Italian Sample**  
*Francesco Lupariello, MD\*; Giuliana Mattioda, MD; Federica Mirri, MD; Giancarlo Di Vella, PhD*
- 11:00 AM – 1:30 PM    **E3**    **The Investigation of Competence Levels of Nurses in Collecting Biological Evidence From Forensic Cases Incoming to Emergency Services**  
*Sitem Cavli, MSc; Umit Ertem, MSc; Alihan Kocabas, PhDc; Zekai Genc, PhD; Tugba Unsal Sapan, PhD\*; Sevil Atasoy, PhD*
- 11:00 AM – 1:30 PM    **E4**    **The Role of Forensic Nursing in Human Trafficking Survivor Intervention**  
*Jaymelee Kim, PhD\*; Michelle Stratton, RN*

## Thursday

### Morning Session

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*Moderator: Deborah Stone, PhD*

- 9:00 AM – 9:45 AM    **E5**    **An Introduction to the New Organization of Scientific Area Committees (OSAC) Forensic Nursing Subcommittee**  
*Nancy Downing, PhD\*; Katherine Scafide, PhD, RN; Joyce Williams, DNP*
- 9:45 AM – 10:00 AM    **E6**    **Building Quality Metrics to Authenticate Science at Work for Your Forensic Nursing Program**  
*Jamie Ferrell, MBA, BSN\**
- 10:00 AM – 10:15 AM    **E7**    **Building Networks, Overcoming Barriers, and Bringing Sexual Assault Nurse Examiner (SANE) Services to Rural Areas**  
*Tami Thomas, PhD\*; Juan Carlos Nobrega, MPH; Sherry Britton-Suscino, MSN; Michelle Caldera, MPH*
- 10:15 AM – 10:30 AM    **BREAK**
- 10:30 AM – 10:45 AM    **E8**    **Does Age Matter? Descriptive Data and Sexual Assault Kit DNA Analysis Findings of Elderly Sexual Assault Victims**  
*Julie Valentine, PhD, MSN\*; Leslie Miles, DNP*
- 10:45 AM – 11:00 AM    **E9**    **The Prevention of Compassion Fatigue in Forensic Nurses During the COVID-19 Pandemic**  
*Nancy Cabelus, DNP\**
- 11:00 AM – 11:30 AM    **E10**    **The Dynamic Development of Forensic Nursing in Switzerland: Flying Forensic Nurses as a Model for Future Success in the Modern Care of Victims of Violence in Switzerland**  
*Valeria Kaegi, RN\*; Julian Mausbach, JD; Michael J. Thali, MD*

# FORENSIC NURSING SCIENCE

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11:30 AM – 12:00 PM      **Questions & Answers**

12:00 PM – 1:30 PM      **BREAK**

## Afternoon Session

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*Moderator: Nancy Downing*

1:30 PM – 2:00 PM      **E12      Aligning Forensic Nurse Core Competencies and Content Using Delphi and Qualitative Methods**

*Patricia M Speck, DNSc\*; Stacey A. Mitchell, DNP, MBA\*; Kelly Berishaj, DNP\*;  
Elizabeth Dowdell, PhD, RN; Michelle Patch, PhD, MSN\*; Deborah St. Germain, DNP*

2:00 PM – 2:30 PM      **E13      The Forensic Nursing Certification Board Process and Outcomes Ensuring Validation of Generalist and Advanced Forensic Nurse Certifications**

*Patricia Speck, DNSc, \*; Stacey A. Mitchell, DNP, MBA; Kelly Berishaj, DNP;  
Elizabeth Dowdell, PhD, RN; Michelle Patch, PhD, MSN; Deborah St. Germain, DNP*

2:30 PM – 2:45 PM      **BREAK**

2:45 PM – 3:00 PM      **E14      Creating a Clinical Forensic Medicine Elective for Advanced Medical Students in the United States**

*Melinda Carter, MD, PhD\**

3:00 PM – 3:15 PM      **E15      Precepting and Mentoring the Forensic Nurse**

*Kathleen Sekula, PhD\*; Virginia Lynch, MSN*

3:15 PM – 3:45 PM      **E16      Who Doesn't Report? Understanding How Victim-Offender and Assault Characteristics Relate to Stated Reasons for Not Reporting Sexual Assault to the Police**

*Jessica Volz, DNP\*; Rachael Goodman-Williams, PhD\**

3:45 PM – 4:00 PM      **Questions & Answers**

## Friday

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

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*Moderator: Jamie Ferrell*

*Co-Moderator: Kurt Weiss*

8:30 AM – 8:45 AM      **E17      Nursing and Engineering Partnerships Lead to Important Advances**  
*Joyce Williams, DNP\**

8:45 AM – 9:00 AM      **D32      Rapid Isolation of Sperm From Sexual Assault Case-Type Samples Utilizing a Microfluidic Device**  
*Kathryn Stephens, PhD\*; Adam Bisogni, PhD; Gothami Padmabandu, MS; Joana Antunes, PhD;  
Harvey Tian, PhD; Richelle Barta, BS*

9:00 AM – 9:15 AM      **E18      Identifying Information in Protein From Sexual Assault Evidence**  
*Glendon Parker, PhD\*; Victoria Montgomery, MSc*



# FORENSIC NURSING SCIENCE

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9:15 AM – 9:30 AM	<b>D33</b>	<b>The Detection of Saliva Stains Using Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR) Spectroscopy: The Effect of Surface and Time</b> <i>Entesar Al-Hetlani, PhD*</i> ; <i>Dalal Al-Sharji, MSc</i> ; <i>Mohamed Amin, MSc</i> ; <i>Igor Lednev, PhD</i>
9:30 AM – 9:45 AM	<b>E19</b>	<b>Right Under Our Noses: Understanding Missed Opportunities for the Collection of Saliva as Evidence</b> <i>Diana Faugno, MSN*</i> ; <i>Jessica Volz, DNP*</i>
9:45 AM – 10:00 AM		<b>BREAK</b>
10:00 AM – 10:15 AM	<b>D34</b>	<b>Wheelchair User Sues Pharmacy for Access as a Violation of the Americans With Disabilities Act</b> <i>Robert Lynch, BArch*</i>
10:15 AM – 10:30 AM	<b>E20</b>	<b>Long-Term Care Facilities (LTCFs) and Nursing Homes (NH) SARS-COV2 Infections: Inevitable Conditions or Medical Malpractice?</b> <i>Domenicantonio Iannello*</i> ; <i>Elena Forzese*</i> ; <i>Gennaro Baldino, MD</i> ; <i>Daniela Sapienza</i> ; <i>Alessio Asmundo</i> ; <i>Chiara Stassi</i> ; <i>Elvira Ventura Spagnolo, MD, PhD</i> ; <i>Cristina Mondello, MD, PhD*</i>
10:30 AM – 11:00 AM	<b>D35</b>	<b>Electrical Injury Evidence and Sequelae</b> <i>Helmut Brosz, BASc*</i>
11:00 AM – 11:15 AM	<b>E21</b>	<b>A Descriptive Study of Non-Fatal Strangulation in Sexual Assault</b> <i>Julie Valentine, PhD, MSN*</i> ; <i>Brooke Stacey, BSN*</i> ; <i>Leslie Miles, DNP</i>
11:15 AM – 11:30 AM	<b>D36</b>	<b>Failure of Suture Materials Used for a Cesarean Section</b> <i>Sarah Hainsworth, BEng, PhD*</i>
11:30 AM – 11:45 AM	<b>E11</b>	<b>A Collaborative Artificial Intelligence Platform for Bruise Age Analysis</b> <i>Katherine Scafide, PhD, RN*</i> ; <i>David Lattanzi, PhD, PE*</i> ; <i>Janusz Wojtusiak, PhD</i>
11:45 AM – 12:00 PM		<b>Questions &amp; Answers</b>

# GENERAL

## Wednesday

### Poster Session

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11:30 AM – 1:00 PM	<b>F1</b>	<b>The Impact of COVID-19 on Death Rates in a Rural Missouri County</b> <i>Marie Lasater, MSN*</i>
11:30 AM – 1:00 PM	<b>F2</b>	<b>Predicting Accidental Drug Overdose as the Cause and Manner of Death in Near Real-Time Using the Suspected Potential Overdose Tracker (SPOT) Tool—New York City, 2018–2020</b> <i>Karli Hochstatter, PhD, MPH*; Jason Graham, MD</i>
11:30 AM – 1:00 PM	<b>F3</b>	<b>Research Questionnaires to Assess Law Enforcement Use of Near-Surface Geophysics</b> <i>Michelle Proulx*; Libby Stern, PhD; Jason Parrish, BA</i>
11:30 AM – 1:00 PM	<b>F4</b>	<b>Determining Diets Via Blood for Forensic Applications</b> <i>Estreylla Sierra, BS*; Jan Halamek, PhD</i>
11:30 AM – 1:00 PM	<b>F5</b>	<b>When the Killer Is Waiting for You at the Door: A Case Report of a Katana Murder</b> <i>Vittorio Gatto, PhD*; Riccardo Renzi, MD; Franco Marinelli, MD</i>
11:30 AM – 1:00 PM	<b>F6</b>	<b>A Thousand Ways to Die: When the Suicidal Instinct Cannot be Stopped</b> <i>Vittorio Gatto, PhD*; Riccardo Renzi, MD; Franco Marinelli, MD; Enrico Silingardi</i>
11:30 AM – 1:00 PM	<b>F7</b>	<b>Godfathers on the Beach—The Hidden Corpse Under the Sand: A Case Report</b> <i>Federico Privitera, MD*; Gabriele Licciardello, MD*; Carlotta Scavone, MD; Andrea Giovanni Musumeci, MD; Giovanni Marci, PhD; Monica Salerno, MD, PhD</i>
11:30 AM – 1:00 PM	<b>F8</b>	<b>Is Infrared Photography Equivalent to the Use of Chromophore Testing for Muzzle-to-Target Distance Determination in Gunshot Residue?</b> <i>Jeff Kay, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</i>
11:30 AM – 1:00 PM	<b>F9</b>	<b>Forensic Sexual Assault Evidence: Moving Past Differential Extractions</b> <i>Raman Sandu-Kirmer, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</i>
11:30 AM – 1:00 PM	<b>F10</b>	<b>The Shelf Life and Effectiveness of Blood Reagents Over Time</b> <i>Aimee Nolan, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</i>
11:30 AM – 1:00 PM	<b>F11</b>	<b>Gun Violence: Recreating Shooting Incidents</b> <i>Michele Valeros, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</i>
11:30 AM – 1:00 PM	<b>F12</b>	<b>The Variation in Suicide Note Traits Between Men and Women</b> <i>Eleanor Abreo, MD*; Edana Stroberg, DO</i>
11:30 AM – 1:00 PM	<b>F13</b>	<b>The Role of the Ethics Committee in Research Activities During the SARS-CoV2 Pandemic</b> <i>Barbara Abenante, MD*; Francesca Capello, MD*; Giancarlo Di Vella, PhD; Lucia Tattoli, PhD</i>
11:30 AM – 1:00 PM	<b>F14</b>	<b>An Improbable Ballistic Trajectory in a Firearm Suicide With an Expanding Ammunition</b> <i>Audrey Servoise*; Bérengère Dautreme; Elise Hardoin; Benjamin Mokdad, MD; Gilles Tournel, MD, PhD</i>
11:30 AM – 1:00 PM	<b>F15</b>	<b>Kinship vs. Unidentified Human Remains (UHR)</b> <i>Kent Harman, MBA*</i>

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11:30 AM – 1:00 PM	<b>F16</b>	<b>True Believers: An Analysis of Trauma Associated With Modern Incidences of Human Sacrifice</b> <i>Samantha McCrane, MA*</i> ; <i>Megan Fry, MA</i> ; <i>Chu Hsiao, PhD</i>
11:30 AM – 1:00 PM	<b>F17</b>	<b>A Case Report of Suicidal Hanging With Precipitation</b> <i>Elise Hardoin*</i> ; <i>Bérengère Dautreme</i> ; <i>Audrey Servoise</i> ; <i>Albane Guigne</i> ; <i>Anne-Claire Lhoumeau, MD</i> ; <i>Gilles Tournel, MD, PhD</i>
11:30 AM – 1:00 PM	<b>F18</b>	<b>WITHDRAWN</b>
11:30 AM – 1:00 PM	<b>F19</b>	<b>Ossified Cephalohematoma in a 27-Day-Old Infant: A Rare Finding Diagnosed by Postmortem Computed Tomography (CT) Scan</b> <i>Michael Pagacz, MD*</i> ; <i>Zabiullah Ali, MD</i>
11:30 AM – 1:00 PM	<b>F20</b>	<b>The Optimization of 3D Fingermark Images for Use in the Federal Bureau of Investigation's (FBI's) Universal Latent Workstation (ULW)</b> <i>Nicole Stanaback*</i> ; <i>Josep De Alcaraz-Fossoul, PhD</i>

## Thursday

### Comparison Evidence

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Moderator: *Gulnaz Javan*

Co-Moderator: *Kristen Osgood*

8:30 AM – 8:45 AM	<b>F21</b>	<b>Fingerprints: A Signature Through Time</b> <i>Tracy Brisendine, BA*</i>
8:45 AM – 9:00 AM	<b>F22</b>	<b>WITHDRAWN</b>
9:00 AM – 9:15 AM	<b>F23</b>	<b>Ridge Volume as a Metric for Fingermark Age Determination and Sex Discrimination</b> <i>Nicole Stanaback*</i> ; <i>Josep De Alcaraz-Fossoul, PhD</i>
9:15 AM – 9:30 AM	<b>F24</b>	<b>The Development of Potential Chemical Print Database in the United Arab Emirates (UAE) for the Analysis of Fatty Acids in Latent Fingerprints as Evidentiary Value in Forensic Investigations</b> <i>Mayssa Hachem, PhD*</i>
9:30 AM – 9:45 AM	<b>F25</b>	<b>Surface-Enhanced Raman Spectroscopy Enables Highly Accurate Identification of Different Brands, Types, and Colors of Hair Dyes</b> <i>Dmitry Kurouski, PhD*</i> ; <i>Samantha Higgins, MSc</i>
9:45 AM – 10:00 AM	<b>F26</b>	<b>Sweat Analysis Leading to the On-Site Detection for Drugs and Alcohol in the Body</b> <i>Jan Halamek, PhD*</i> ; <i>Giana Biddle, MS</i> ; <i>Ashley Newland, MS</i> ; <i>Emilynn Banks, BS</i> ; <i>Estreylla Sierra, BS</i>
10:00 AM – 10:15 AM		<b>BREAK</b>

# GENERAL

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## Feet and Education

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Moderator: Denise Abboud

Co-Moderator: Francesco Sessa

- 10:15 AM – 10:30 AM    **F27**    **Let the Feet Do the Talking**  
*Anita Hasert, BS\**
- 10:30 AM – 10:45 AM    **F28**    **The Analysis of Feet, Footprints, and Gait—How Principles of Forensic Podiatry Assist in Criminal Investigations**  
*Kewal Krishan, PhD; Michael Nirenberg, DPM\**
- 10:45 AM – 11:00 AM    **F29**    **A Comparison of Various Score-Based Likelihood Ratio (SLR) Methods for the Quantitative Assessment of Footwear Evidence**  
*Valerie Han, BA\*; Alicia Carriquiry, PhD*
- 11:00 AM – 11:15 AM    **F30**    **WITHDRAWN**
- 11:15 AM – 11:30 AM    **F31**    **Source Identification of Shoeprints in a Mock Crime Scene Using an Algorithm Based on Automatic Alignment**  
*Hana Lee, BS\*; Alicia Carriquiry, PhD*
- 11:30 AM – 11:45 AM    **F32**    **Available Now: The First Open Access and Globally Accessible Forensic Science Library**  
*Jeff Teitelbaum, MS\**
- 11:45 AM – 12:00 PM    **F33**    **Are Internships History?**  
*Max Houck, MA, PhD\**
- 12:00 PM – 12:15 PM    **F34**    **Avoiding Alkynes of Hiring Issues: Bridging the Undergraduate Gap of Academics to Practice**  
*Michelle Rippey, MFS, EdD\**
- 12:15 PM – 1:30 PM    **BREAK**

## Standards

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Moderator: Miron Gilbert

Co-Moderator: Caitlin Porterfield

- 1:30 PM – 1:45 PM    **F35**    **Medicolegal Death Investigation—A Call for Uniformity in Core Data Elements to Support Interoperability and Electronic Exchange of Information**  
*Kelly Keyes, BS\*; Erica Fornaro, BS; Jeri Roper-Miller, PhD*
- 1:45 PM – 2:00 PM    **F36**    **Standards Development Activities in Medicolegal Death Investigation**  
*Kelly Keyes, BS\*; Elissia Conlon, BA*
- 2:00 PM – 2:15 PM    **F37**    **Standards Development Activities in Wildlife Forensic Biology**  
*Kimberly Frazier, MS; Jason Byrd, PhD\*; Christina Lindquist, MS*
- 2:15 PM – 2:30 PM    **F38**    **Knowing What's Best: An Examination of Investigator Perspectives on the Relevance of "Best Practice"**  
*Steff King, MA\*; Sheri Fabian, PhD; Gail Anderson, PhD*  
*(FSF Emerging Forensic Scientist Award Oral Presentation)*
- 2:30 PM – 2:45 PM    **F39**    **A Blueprint to Building an International Organization for Standardization (ISO) Quality Management System**  
*Nicole Jones, MS\*; Kelly Keyes, BS; John Grassel, MS*

# GENERAL

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2:45 PM – 3:00 PM	<b>F40</b>	<b>How Creating Infrastructure and Incentives Can Increase Quality in Forensic Science</b> <i>Brian Gestring, MS*</i>
3:00 PM – 3:15 PM	<b>F41</b>	<b>High Reliability Organizations: What Are They and How Do They Relate to Crime Laboratories?</b> <i>Martin Novak, MPA*</i>
3:15 PM – 3:30 PM		<b>BREAK</b>

## Animals and Drugs

Moderator: *Monica Broncucia-Jordan*

Co-Moderator: *Kristina Scott*

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3:30 PM – 3:45 PM	<b>F42</b>	<b>Canines Can Accurately Pinpoint the Location of Drowning Victims: Deep, Cold Water Recoveries</b> <i>Mary Cablk, PhD*</i>
3:45 PM – 4:00 PM	<b>F43</b>	<b>An Instrument-Based Approach to the Use of Human Scent as a Biometric</b> <i>Vidia Gokool, MS*; Chantrell Frazier, DPhil; Howard Holness, PhD; Kenneth Furton, PhD</i>
4:00 PM – 4:15 PM	<b>F44</b>	<b>Large Animal Veterinary Forensics</b> <i>Cheryl Nelson, DVM*</i>
4:15 PM – 4:30 PM	<b>F45</b>	<b>Cutaneous Lesions Associated With “Skin Popping”: Case Reports</b> <i>Mattia Arturi, MS*; Martina Demasi, MD; Chiara Franzetti, MD; Pietro Salmoirago, MD; Luisa Andreello, MD, PhD; Matteo Moretti, MD; Silvia Visonà, PhD; Luca Morini, PhD</i>
4:30 PM – 4:45 PM	<b>F46</b>	<b>Combining Color Tests With Paper Spray-Mass Spectrometry for Drug Detection</b> <i>Sarah Prunty, BS*; Nicholas Manicke, PhD; Dan Carmany, MS; Elizabeth Dhummakupt, PhD</i>
4:45 PM – 5:00 PM	<b>F47</b>	<b>Standardization of Dogs and Sensors: Update on Current and Planned Standard of the Dogs and Sensors ASB Consensus Body</b> <i>Kelvin Frank, Jr., MSFS; Howard Holness, PhD; Suzanne Perry, Paola Prada-Tiedemann, PhD; Kenneth Furton, PhD*</i>
5:00 PM – 5:15 PM	<b>F48</b>	<b>The Determination of the Breakdown Products of Black Tar and Powder Heroin via Ultra Performance Liquid Chromatography-Photo Diode Array (UPLC-PDA)</b> <i>Alyssa Sanchez, BS*; Bruce McCord, PhD</i>

## Poster Session

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11:30 AM – 1:00 PM	<b>F49</b>	<b>Fetal Alcohol Spectrum Disorder (FASD) and Criminal Justice: An Italian Research Project</b> <i>Francesco Sessa, MS, PhD*; Giuseppe Li Rosi, MD; Salvatore Rocuzzo, MD; Giuseppe Cocimano, MD; Massimiliano Esposito, MD; Cristoforo Pomara, MD</i>
11:30 AM – 1:00 PM	<b>F50</b>	<b>Unlocking the Mysteries of Faith: The Importance of Forensic Sciences in a Case Series</b> <i>Francesco Sessa, MS, PhD*; Giuseppe Cocimano, MD; Pietro Zuccarello, PhD; Federica Ministeri, MD; Federico Privitera, MD; Cristoforo Pomara, MD</i>
11:30 AM – 1:00 PM	<b>F51</b>	<b>Croatian Forensic DNA Database: Past, Present, and Future</b> <i>Igor Obležčuk, MS; Andrea Ledic, MS*; Adela Makar, MS; Vedrana Škaro, PhD; Sasa Missoni, PhD; Damir Marjanović, PhD; Dragan Primorac, MD, PhD</i>

# GENERAL

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11:30 AM – 1:00 PM	<b>F52</b>	<b>Can Stab Injuries Determine the Position of the Aggressor? An Exercise With a Real Case</b> <i>Ricardo Mendonca, MS*</i> ; <i>Sara Adriaola, MS</i> ; <i>Eduardo Coutinho, MS</i> ; <i>João Pinheiro, PhD, MD</i>
11:30 AM – 1:00 PM	<b>F53</b>	<b>When Book Fiction Becomes Reality: A Case Report of a Brutal Murder With a Hammer and a Related Flubromazepam Intoxication</b> <i>Vittorio Gatto, PhD*</i> ; <i>Riccardo Renzi, MD</i> ; <i>Franco Marinelli, MD</i>
11:30 AM – 1:00 PM	<b>F54</b>	<b>Drug Addiction and Pregnancy: A “Crack” Baby Case</b> <i>Sara Adriaola, MS*</i> ; <i>Ricardo Mendonca, MS</i> ; <i>Eduardo Coutinho, MS</i> ; <i>Helena Corro, MS</i> ; <i>João Pinheiro, PhD, MD</i>
11:30 AM – 1:00 PM	<b>F55</b>	<b>The Migratory Phenomenon in Italy During the COVID-19 Pandemic: A Technical and Methodological Approach of Hotspot Inspection in the Medicolegal Perspective for Public Health and Human Rights</b> <i>Giuseppe Cocimano, MD*</i> ; <i>Aldo Liberto, MD</i> ; <i>Giuseppe Li Rosi, MD</i> ; <i>Salvatore Rocuzzo, MD</i> ; <i>Salvatore Iannuzzi, MD</i> ; <i>Cristoforo Pomara, MD</i>
11:30 AM – 1:00 PM	<b>F56</b>	<b>A 3D Reconstruction of a Complex Road Accident</b> <i>Marco Torrisi, MD*</i> ; <i>Martina Francaviglia, MD*</i> ; <i>Andrea Vittorio Maria Failla, MD*</i> ; <i>Federico Privitera, MD</i> ; <i>Francesco Sessa, MS, PhD</i> ; <i>Cristoforo Pomara, MD</i>
11:30 AM – 1:00 PM	<b>F57</b>	<b>Strangulation Asphyxia: Homicide or Suicide? A Practical Approach</b> <i>Laura Panata, MD*</i> ; <i>Michela Ferrara, MD*</i> ; <i>Giuseppe Bertozzi, MD</i> ; <i>Luca Pistolesi, MD</i> ; <i>Isabella Mercurio, MD</i> ; <i>Massimo Lancia, MD</i> ; <i>Gianpietro Volonnino, MD</i> ; <i>Mauro Bacci, MD*</i>
11:30 AM – 1:00 PM	<b>F58</b>	<b>To Die in Pursuit of Beauty: A Case of Systemic Silicone Oil Embolism After a Breast Beauty Treatment</b> <i>Vittorio Gatto, PhD*</i> ; <i>Franco Marinelli, MD</i> ; <i>Riccardo Renzi, MD</i>
11:30 AM – 1:00 PM	<b>F59</b>	<b>Self-Immolation: A Case Series Investigating the Motivations and Risk Factors of a Rare Method of Suicide</b> <i>Abdulaziz Al-Malki, MD*</i>
11:30 AM – 1:00 PM	<b>F60</b>	<b>Trainspotting: Sudden Unexpected Death After Cannabis Consumption</b> <i>Giuseppe Bertozzi, MD*</i> ; <i>Michela Ferrara, MD*</i> ; <i>Giovanni Pollice, MD</i> ; <i>Simona Vittorio, MS</i> ; <i>Elena Giacani, MD</i> ; <i>Giovanni Gurgoglione, MD</i> ; <i>Giuseppe Rinaldi, MD</i> ; <i>Raffaele La Russa, MD</i>
11:30 AM – 1:00 PM	<b>F61</b>	<b>Measuring the Environmental Degradation of Traditional Drug and Novel Psychoactive Substance (NPS) Residues</b> <i>Elizabeth Robinson, MS*</i> ; <i>Edward Sisco, PhD</i>
11:30 AM – 1:00 PM	<b>F62</b>	<b>Unidentified Child Remains: Analysis of Identifications</b> <i>Amanda Bixler, MA*</i>
11:30 AM – 1:00 PM	<b>F63</b>	<b>Eros and Thanatos: When Autoerotic Stimulation Leads to Death: A Presentation of Three Cases</b> <i>Nicola Galante, MD*</i> ; <i>Lorenzo Franceschetti, MD</i> ; <i>Graziano Domenico Luigi Crudele, MD</i> ; <i>Irene Carabelli, MD</i> ; <i>Domenico Furci, MD</i> ; <i>Riccardo Zoia, MD</i>
11:30 AM – 1:00 PM	<b>F64</b>	<b>Youth Suicide Trends in Georgia: A Retrospective Study on the Effects of Pop Culture, Social Media, and the COVID-19 Pandemic</b> <i>Samantha Mattox, DO*</i> ; <i>Cody Archer, BS</i> ; <i>Elizabeth Andrews, BS</i> ; <i>John Carter, PhD, MPH</i> ; <i>Natasha Grandhi, MD</i>

# GENERAL

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11:30 AM – 1:00 PM	<b>F65</b>	<b>Solvent Effects in the Analysis of Explosives</b> <i>Clarissandra Braun*</i> ; <i>Kenyon Evans-Nguyen, PhD</i>
11:30 AM – 1:00 PM	<b>F66</b>	<b>The Architecture of a Face: Craniofacial Forensic Reconstruction on Paper</b> <i>Sharon Moses, PhD*</i>
11:30 AM – 1:00 PM	<b>F67</b>	<b>Cadaver Dogs and Handlers: Detection of Ancient Bones</b> <i>Hannah Cawley*</i> ; <i>Lisa Ludvico, PhD</i>
11:30 AM – 1:00 PM	<b>F68</b>	<b>A Cruel Case of Homicide: Execution by Carbonization After an Assault With a Knife</b> <i>Andrea Cioffi, MD*</i> ; <i>Camilla Cecannecchia, MD*</i> ; <i>Benedetta Baldari, MD</i>
11:30 AM – 1:00 PM	<b>F69</b>	<b>Toxicological Effects of Amnesic Shellfish Poison (ASP) Poisoning: From Cleopatra’s Controversial Death to Modern-Day Forensic Considerations</b> <i>Francesco Galassi, MD, PhD*</i> ; <i>Giulio Pulpito, MD*</i> ; <i>Elena Varotto, PhD*</i> ; <i>Valerio Aquila, MD*</i> ; <i>Matteo Sacco, MD*</i> ; <i>Alessandro Tarallo, MD*</i> ; <i>Saverio Gualtieri, MD*</i> ; <i>Fabrizio Cordasco, MD</i> ; <i>Carmen Scalise, PhD, MD</i> ; <i>Vincenzo Ritorto, MD*</i> ; <i>Maria Manno, MD</i> ; <i>Umberto Rosini, MD</i> ; <i>Martino Maesani, MD</i> ; <i>Angelica Zibetti, MD</i> ; <i>Santo Gratteri, PhD, MD</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i>

## Friday—Session I

### Case Studies

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Moderator: Alice Blair

Co-Moderator: Stephanie Terndrup

8:30 AM – 8:45 AM	<b>F70</b>	<b>The 1921 Tulsa Race Massacre and the Demographics of Death</b> <i>Phoebe Stubblefield, PhD*</i> ; <i>Angela Berg, MA</i> ; <i>Robert Pickering, PhD</i>
8:45 AM – 9:00 AM	<b>F71</b>	<b>A 1966 Unsolved Homicide, Conjecture, and Forensic Inadequacy</b> <i>Tracy Brisendine, BA*</i>
9:00 AM – 9:15 AM	<b>F72</b>	<b>A Case Study: Was This a Homicide or Did The Decedent Get His Wish to Fly High and Be Fed to The Birds?</b> <i>Emily Ditto, BA*</i> ; <i>Brett Bulington*</i> ; <i>Carrie Costello, MS</i>
9:15 AM – 9:30 AM	<b>F73</b>	<b>A Case of Filicide: Combined Homicide by Asphyxiation and Stabbing</b> <i>Andrea Cioffi, MD</i> ; <i>Benedetta Baldari, MD*</i> ; <i>Camilla Cecannecchia, MD</i>
9:30 AM – 9:45 AM	<b>F74</b>	<b>A Successful Multidisciplinary Medicolegal Investigation in the Absence of a Body</b> <i>Kyle Shaw, MBBS</i> ; <i>Krystal Locklear, BAS</i> ; <i>Brett Harding, MBA*</i>
9:45 AM – 10:00 AM	<b>F75</b>	<b>A Case of Death From Pneumonia Due to Medical Malpractice in a Young Man Suffering From Psychiatric Disorders</b> <i>Laura Scotti, MD*</i> ; <i>Giacomo Belli, MD</i> ; <i>Paola Braga, MD</i> ; <i>Matteo Moretti, MD</i> ; <i>Silvia Visonà, PhD</i> ; <i>Luca Morini, PhD</i>
10:00 AM – 10:15 AM	<b>F76</b>	<b>Examining Trends in Juvenile Deaths in Harris County, Texas: A Seven-Year Retrospective Review (2015–2021)</b> <i>Carolyn Berthelot, MS*</i> ; <i>Kaeleigh Demeter, BS, BA*</i> ; <i>Pramod Gumpeni, MD</i>
10:15 AM – 10:30 AM		<b>BREAK</b>

# GENERAL

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## At Risk Population

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Moderator: Lee Bushong

Co-Moderator: Gulzan Javan

- 10:30 AM – 10:45 AM **F77** **Knowledge, Awareness, and Attitudes Toward Child Abuse and Pediatric Patient Management During the COVID-19 Pandemic Among Students of Medicine and Surgery: A Key to Improving Forensic Medicine Courses**  
*Giovanni Aulino, MD\**; *Flavia Beccia, MD*; *Michele Rega, MD*; *Chiara Siodambro, MS*; *Stefania Boccia, MD*; *Antonio Lanzone, MD*; *Antonio Oliva, MD, PhD*
- 10:45 AM – 11:00 AM **F78** **The Italian Missing Children Association Realizing Age Progression for Missing Children Organization: The Collaboration With Missing Child Kenya**  
*Laura Donato, PhD\**; *Rossana Cecchi, MD*; *Maryana Munyendo, BA*; *Alessandro di Luca, MD*; *Francesca Filloramo, MD*
- 11:00 AM – 11:15 AM **F79** **Sexual Violence Among Female Youth Gang Members in Our Communities**  
*Cliff Akiyama, MPH, MA\**
- 11:15 AM – 11:30 AM **F80** **WITHDRAWN**
- 11:30 AM – 11:45 AM **F81** **The Multidisciplinary Role for the Multiform Issues of Medicolegal Assessment of Physical Abuses in Asylum Seekers**  
*Lorenzo Franceschetti, MD\**; *Francesca Magli, MA*; *Lidia Maggioni, MD*; *Vera Gloria Merelli, MD*; *Danilo De Angelis, DDS*; *Alessandra Kustermann, MD*; *Cristina Cattaneo, MD, PhD*
- 11:45 AM – 12:00 PM **F82** **The Management of Dead Migrants: Standardization of Data Collected and Centralization of Databases Toward Helping Families Find Their Loved Ones**  
*Sherry Fox, PhD\**; *Admir Jugo, PhD*
- 12:00 PM – 12:15 PM **F83** **A Novel Surveillance Method for Suspected Drug-Related Deaths**  
*Marlon Williams, MPH\**; *Andrew Falzon, MD*
- 12:15 PM – 1:30 PM **BREAK**

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## Bias, Ethics, and Education

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Moderator: Stacey Chepren

- 1:30 PM – 1:45 PM **F84** **The Harassment and Bullying of Forensic Scientists: The Impact of Gender, Organizational Hierarchy, and Civil Servant Status**  
*Rana DellaRocco, BS, MS, MPA\**; *Ryan Krone, PhD*; *Nancy Wayne, PhD*
- 1:45 PM – 2:00 PM **F85** **Offender Motivation, Victim Vulnerability, and Systemic Bias: Understanding Patterns in Transgender Homicide Victimization Data**  
*Robert Eckstein, PsyD\**; *Amy Michael, PhD\**
- 2:00 PM – 2:15 PM **F86** **An Ounce of Prevention: A Simple and Practical Tool for Mitigating Cognitive Bias in Forensic Decisions**  
*Adele Quigley-McBride, PhD\**; *Tiffany Roy, MSFS, JD*; *Brandon Garrett, JD*; *Jeff Kukucka, PhD*
- 2:15 PM – 2:30 PM **F87** **Criminology Skills—Between Ethical Questions And Responsibilities**  
*Giuseppina Seppini, MS\**; *Iolanda Ippolito, MS*



# GENERAL

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2:30 PM – 2:45 PM	<b>F88</b>	<b>An Update on Ethics Committee Approval Reporting in Cadaveric-Based Research Publication: A Five-Year Study</b> <i>Mohammad Nasir Ahmad, PhD*; Vina Vaswani, MD, MPhil, PhD</i>
2:45 PM – 3:00 PM	<b>F89</b>	<b>Using the Science Teachers' Assessment Literacy Model as a Framework for Implementing Specifications Grading in a Senior-Level Forensic Laboratory Quality-Assurance and Professional Practices Course</b> <i>Tamra Legron-Rodriguez, PhD*; Christopher Randles, PhD</i>
3:00 PM – 3:15 PM	<b>F90</b>	<b>The National Institute of Justice's Forensic Science Strategic Research Plan</b> <i>Lucas Zarwell, MFS*</i>
3:15 PM – 3:30 PM		<b>BREAK</b>

## Crime Scene Response

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Moderator: Madai Batista

Co-Moderator: Lenny Reinart

3:30 PM – 3:45 PM	<b>F91</b>	<b>WITHDRAWN</b>
3:45 PM – 4:00 PM	<b>F92</b>	<b>Improving Crime Scene Investigator (CSI) Response: An Early Roadmap for the Increased Quality and Effectiveness of Crime Scene Investigations</b> <i>Joe Trevino, MS*</i>
4:00 PM – 4:15 PM	<b>F93</b>	<b>An Investigation of Best Practices for Fatal and Non-Fatal Bathing-Environment Cases: Guidelines and Tools for Scene Investigators, Law Enforcement, Medical Personnel, Death Investigators, and Jurisprudence</b> <i>Andrea Zaferes, BS*; Robert Bready, MS</i>
4:15 PM – 4:30 PM	<b>F94</b>	<b>Assessing an Innovative Response to Intimate Partner Violence-Related Strangulation</b> <i>Katherine Brown, PhD*; Tara Shelley, PhD; Cortney Franklin, PhD</i>
4:30 PM – 4:45 PM	<b>F95</b>	<b>Forensic Archeology and Crime Scene Management: Challenges and Shortcomings in the Colombian Context</b> <i>Claudia Delgado-Aguacia, MSc*; Santiago Reina-Camacho, MSc</i>
4:45 PM – 5:00 PM	<b>F96</b>	<b>The Rural-Urban Differences in Access to Medicolegal Death Investigation Resources and Services: Findings From the 2018 Census of Medical Examiner and Coroner Offices (CMEC)</b> <i>Kelly Keyes, BS; Hope Smiley-McDonald, PhD*; Paige Presler-Jur, MS; Anum Imran, BS; Jeri Roper-Miller, PhD</i>
5:00 PM – 5:15 PM	<b>F97</b>	<b>The Trends and Demographic Differences in Overdose Deaths Before and During the COVID-19 Pandemic in Jefferson County, Alabama</b> <i>Abby Chapman*; Caitlin Wolford-Clevenger, PhD; Brandi McCleskey, MD</i>

# GENERAL

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## Friday—Session II

### Identification I

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Moderator: Clifton Calloway

Co-Moderator: Jessica Crowson

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| 8:30 AM – 8:45 AM  | <b>F98</b>  | <b>A Multiagency Investigation of Multiple Murders in the United States With the Trial in Indonesia</b><br><i>Lakshmanan Sathyavagiswaran, MD*</i>  |
| 8:45 AM – 9:00 AM  | <b>F99</b>  | <b>Alternate Light Source (ALS) Detection of Subclinical Bruising: Lessons Learned While Assessing a Forensic Technique</b><br><i>Leonard Reinart, JD, MS*</i>  |
| 9:00 AM – 9:15 AM  | <b>F100</b> | <b>Forensic Autopsies: The Contribution of the Systematic Practice of Subcutaneous Dissection for Detecting Contusions or Deep Hematoma Not Visible on External Visual Examination</b><br><i>Laetitia Leveque, MD*; Eric Baccino, MD; Martrille Laurent, MD</i> |
| 9:15 AM – 9:30 AM  | <b>F102</b> | <b>Traceability of Human Remains From Discovery to Burial: DIVIDOC and DIVIMAP</b><br><i>Jose Baraybar, PhD*; Armand Prioreshi; Pierre Francois, PhD</i>  |
| 9:30 AM – 9:45 AM  | <b>F103</b> | <b>Pesticides and Blow Flies: How Do Clothianidin and Bifenthrin Affect Calliphoridae (Diptera) Oviposition?</b><br><i>Teomie Rivera-Miranda, PhD*; Krystal Hans, PhD</i>   |
| 9:45 AM – 10:15 AM |             | <b>BREAK</b>  |

### Identification II

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Moderator: Angel Miles

Co-Moderator: Daniel Morgan

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| 10:15 AM – 10:30 AM | <b>F104</b> | <b>The Influence of the Victim-Offender Relationship on Body Disposal in Solved United Kingdom Homicides</b><br><i>Anna Williams, PhD*; Kirsty Bennett, MSc</i>  |
| 10:30 AM – 10:45 AM | <b>F105</b> | <b>WITHDRAWN</b>   |
| 10:45 AM – 11:00 AM | <b>F106</b> | <b>Information Analysis on Disappearance Cases for the Construction of Missing Persons Lists and the Identification of Disposed Places in River Environments: Experiences in La Miel River, Caldas, Colombia</b><br><i>Luz Perez, PhD*; Ana Carolina Guatame, MSc; Alexander Sabogal; Camilo Castro, Geographer; Natalia Camacho</i> |
| 11:00 AM – 11:15 AM | <b>F107</b> | <b>Domicile Unknown: Scientific Challenges of Identifying Homeless Decedents</b><br><i>Jessica Crowson, MSc*</i>   |
| 11:15 AM – 11:30 AM | <b>F108</b> | <b>Decedent Identification: A Look at Forensic Genealogy When All Other Methods Failed</b><br><i>David Kintz, BS*</i>  |
| 11:30 AM – 11:45 AM | <b>F109</b> | <b>WITHDRAWN</b>   |

# GENERAL

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11:45 AM – 12:00 PM      **F110**      **Medicolegal Issues in Cremation: A Comparative Analysis of International Legislation and a Proposal of a Unified Operating Methodology**  
*Gaetano Di Donna, MD\**; *Ludovica Busillo, MD*; *Pierpaolo Di Lorenzo, MD*; *Claudia Casella, JD*;  
*Mariagrazia Marisei, MD*; *Serena Dei Medici, MD*; *Emanuele Capasso, MD*; *Massimo Niola, MD*

12:00 PM – 1:30 PM      **BREAK**

## Firearms

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*Moderator: Cliff Akiyama*

*Co-Moderator: Frank Bailey*

- 1:30 PM – 1:45 PM      **F111**      **Firearms Deactivation and Deactivation Process Control in Croatia/European Union**  
*Damir Tomasek, MS\**
- 1:45 PM – 2:00 PM      **F112**      **The Direct Detection of Invisible Gun Powder Residue on Fabric Surfaces: A Nano Tape and a Biological Microscope Method**  
*John Wang, PhD\**
- 2:00 PM – 2:15 PM      **F113**      **A Comparison Between Normal Test Firing and Submerged Test Firing of the Same Firearm and Ammo**  
*Ali Shahid Hussain, BME\**
- 2:15 PM – 2:30 PM      **F114**      **A Quick Comparison of the Polygonal Rifling Using a 4K Resolution Microscope: A Field Examination Approach**  
*John Wang, PhD\**
- 2:30 PM – 2:45 PM      **F115**      **The 3D Correlations in Automated Ballistic Identification Systems Using the Evofinder® Ballistic Identification System**  
*Logan Eickhoff, BS\**

## Poster Session

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- 11:30 AM – 1:00 PM      **F101**      **The Effect of Common Drugs on Human Body Decomposition and the Soil Environment**  
*Gabriela Mroz, MSc\**; *Sophie Turfus, MSc, PhD*; *Anna Williams, PhD*
- 11:30 AM – 1:00 PM      **F116**      **The Attitudes of Infertile Italian Women Regarding Ethical and Regulatory Limits of Medically Assisted Procreation (MAP)**  
*Andrea Cioffi, MD\**; *Camilla Cecannecchia, MD\**
- 11:30 AM – 1:00 PM      **F117**      **The Role of Forensic Medicine in Addressing War Crimes: A Perspective From the Russia-Ukraine Conflict During the COVID-19 Pandemic**  
*Andrea Cioffi, MD\**; *Camilla Cecannecchia, MD\**
- 11:30 AM – 1:00 PM      **F118**      **A Wake-Up Call on the Deceptive Nature of Sodium Nitrite Suicides: A Case Series**  
*Alice Chiara Manetti, MD\**; *Valentina Bugelli, MD, PhD\**; *Ilaria Marcacci, MD\**;  
*Carla Occhipinti, MD*; *Naomi Iacoponi, MD*; *Ilaria Tarozzi, MD*; *Fabio Stefanelli, PhD*;  
*Silvio Chericoni, PhD*
- 11:30 AM – 1:00 PM      **F119**      **Surveillance Fails: Suicides in Jails**  
*Giovanni Pollice, MD\**; *Diego Moro, MD\**; *Raffaele La Russa, MD*;  
*Michele Ahmed Antonio Karaboue, MLL*; *Valentina Milone, MD*;  
*Benedetta Baldari, MD\**; *Simona Vittorio, MS\**

# GENERAL

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- 11:30 AM – 1:00 PM **F120** **Exploring Potential Factors That Can Impact Students' Professional Identity in Forensic Science**  
*Abigail Castillo, BS\**; *Cameron Bechard, BS*; *Tamra Legron-Rodriguez, PhD*;  
*Nicole Lapeyrouse, DPhil*
- 11:30 AM – 1:00 PM **F121** **The Use of Barr Bodies to Determine Sex in Samples of Forensic Significance**  
*Julianna Jimenez, BS\**; *Kimberlee Moran, MSc*; *Marianne Hamel, MD, PhD*
- 11:30 AM – 1:00 PM **F122** **The Effects of Sleep Deprivation and Fatigue on Crime Scene Examination**  
*Kimberlee Moran, MSc\**; *Skylar Gohn, MSFS\**; *Andrea Spaeth, PhD*
- 11:30 AM – 1:00 PM **F123** **Group Sexual Violence: The Experience of Careggi Hospital in Florence (2010–2021)**  
*Chiara Siodambro, MS\**; *Amalia Rizzo, MS*; *Marco Occari, MS*; *Francesca Pampaloni, MD*;  
*Paola D'Onofrio, MD*; *Edoardo Orlandi, MLL*; *Martina Focardi, MS*; *Vilma Pinchi, MS*
- 11:30 AM – 1:00 PM **F124** **Forensic Aspects in Death and Injuries Due to Elderly Neglect: Interpretative Criteria in the Acknowledgment of Elderly Maltreatment**  
*Angelica Zibetti, MD\**; *Umberto Rosini, MD*; *Matteo Sacco, MD\**; *Martino Maesani, MD*;  
*Carmen Scalise, PhD, MD*; *Fabrizio Cordasco, MD*; *Maria Manno, MD*; *Saverio Gualtieri MD\**;  
*Pietrantonio Ricci, PhD, MD*; *Isabella Aquila, PhD, MD\**
- 11:30 AM – 1:00 PM **F125** **The Chemical Analysis of Sexual Lubricant Residue: A Comparison of Swabs Used to Perform Medical Examinations Analyzed by Spectroscopic Techniques**  
*Safiya Best, PhD\**; *Candice Bridge, PhD*; *Santana Thomas, PhD*
- 11:30 AM – 1:00 PM **F126** **The Ahoms—The Lost Dynasty of Northeast India: Reconstructing Ancestry Through Palaeogenomics Approaches**  
*Sachin Kumar, MTech\**; *Niraj Rai, PhD*
- 11:30 AM – 1:00 PM **F127** **Proteomics Profiling From Skeletal Remains for Forensic Time-Since-Death Estimations: A Systematic Review and Future Probabilities**  
*Jagmahender Sehrawat, PhD*; *Mohammad Nasir Ahmad, PhD\**
- 11:30 AM – 1:00 PM **F128** **Self-Amputation in Complex Suicides: A Comparison of Two Cases**  
*Elizabeth Higginson, MD, PhD\**; *Catherine Perez, MD*; *Eleftherios Vouyoukas, MD*;  
*Jeffrey Jentzen, MD, PhD*; *Allecia Wilson, MD*
- 11:30 AM – 1:00 PM **F129** **“Long Covid” Injury in Health Care Workers: The Biological Damage and Indemnity Compensation**  
*Claudia Pitrone, MD\**; *Elena Forzese, MD\**; *Giorgia Burrascano, MD*; *Chiara Stassi, MD*;  
*Gennaro Baldino, MD*; *Cristina Mondello, MD*; *Elvira Ventura Spagnolo, MD*;  
*Alessio Asmundo, MD*; *Daniela Sapienza, MD*
- 11:30 AM – 1:00 PM **F130** **The Role of Fauna at the Crime Scene: A Risk of Contamination or a Possible Aid in Reconstruction?**  
*Alessandro Tarallo, MD\**; *Matteo Sacco, MD\**; *Valerio Aquila, MD\**; *Giulio Pulpito, MD\**;  
*Saverio Gualtieri, MD\**; *Vincenzo Ritorto, MD\**; *Carmen Scalise, PhD, MD*;  
*Fabrizio Cordasco, MD*; *Umberto Rosini MD*; *Maria Manno, MD*; *Roberto Raffaele, BE\**;  
*Martino Maesani, MD*; *Pietrantonio Ricci, PhD, MD*; *Isabella Aquila, PhD, MD\**
- 11:30 AM – 1:00 PM **F131** **Current Status and Future Steps of Forensic Science in the Republic of The Gambia**  
*Peter Dampha, BS\**

# GENERAL

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- 11:30 AM – 1:00 PM    **F132**    **The Contribution of Forensic Botany in Solving Cases of Traumatic Deaths With Dubious Dynamics**  
*Umberto Rosini, MD\**; *Angelica Zibetti, MD*; *Maria Manno, MD*; *Martino Maesani, MD*; *Carmen Scalise, PhD, MD*; *Fabrizio Cordasco, MD*; *Matteo Sacco, MD\**; *Saverio Gualtieri, MD\**; *Vincenzo Ritorto, MD\**; *Alessandro Tarallo, MD\**; *Giulio Pulpito, MD*; *Santo Grattero, PhD, MD*; *Pietrantonio Ricci, PhD, MD*; *Isabella Aquila, PhD, MD\**
- 11:30 AM – 1:00 PM    **F133**    **Comparative Detection of Organic Peroxides Used in Improvised Explosive Devices Using Electrospray Ionization-Tandem Mass Spectrometry (ESI-MS/MS) and Liquid Chromatography/Triple Quadrupole/Mass Spectrometry (LC/QqQ/MS)**  
*Kayla Massari, BS, MA\**  
(FSF Emerging Forensic Scientist Award Poster Presentation)
- 11:30 AM – 1:00 PM    **F134**    **Death From Heat: A Case Report and Literature Review of Fatal Heat Stroke**  
*Andrea Cioffi, MD\**; *Camilla Cecannecchia, MD\**; *Benedetta Baldari, MD*
- 11:30 AM – 1:00 PM    **F135**    **Humanitarian Forensics in the Era of Conflicts and Pandemic**  
*Shubham Thakur, MSc*; *Jagmahender Sehwat, PhD\**
- 11:30 AM – 1:00 PM    **F136**    **The DNA Analysis of the Human Tissue Leaching From Different Soil Depths**  
*Jenna Hamilton, BA\**; *Pamela Marshall, PhD*

# JURISPRUDENCE

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## Thursday

### Forensic Standards Development: Impact and Education Plans for the Legal Community

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Moderator: Lynn Garcia

Co-Moderator: Jarvis Parsons

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|---------------------|-----------|---|
| 8:30 AM – 9:00 AM   | <b>G1</b> | <b>An Update on Standards Development Activities in Forensic Science: Legal Impacts Moving Forward</b><br><i>Christopher Plourd, JD*</i>                          |
| 9:00 AM – 9:30 AM   | <b>G2</b> | <b>How Relevant Are Forensic Science Standards to the Legal Process?</b><br><i>John Paul (JP) Jones, BS, MBA*; Dana Delger, JD*</i>                               |
| 9:30 AM – 10:00 AM  | <b>G3</b> | <b>The Organization of Scientific Area Committees (OSAC) Registry Standards in the Area of Reporting and Testimony</b><br><i>Lynn Garcia, JD*</i>                 |
| 10:00 AM – 10:30 AM | <b>G4</b> | <b>The Organization of Scientific Area Committees (OSAC) Implementation: A Public and Private Perspective</b><br><i>Erika Ziemak, MSFS*; Hannah Gillis, MSFS*</i> |
| 10:30 AM – 10:45 AM |           | <b>BREAK</b>  |

### Forensics Training for Lawyers

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Moderator: Jarvis Parson

Co-Moderator: Lynn Garcia

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|---------------------|-----------|---|
| 10:45 AM – 11:00 AM | <b>G5</b> | <b>What's Happening (or Not?) With Forensic Science Training for Officers of the Court</b><br><i>Marna McLendon, JD, MFS*; John Paul (JP) Jones, BS, MBA*</i>   |
| 11:00 AM – 11:30 AM | <b>G6</b> | <b>The Scientific Literacy Project: A Collaborative Effort in Educating Legal Professionals on Forensic Evidence</b><br><i>Anthony Greiter, BS*; Stacy Renfro, MBA; Alicia Carriquiry, PhD; Hal Stern, PhD; Chris Fabricant, JD; Marika Meis, JD; Lynn Garcia, JD</i> |
| 11:30 AM – 12:00 PM | <b>G7</b> | <b>Ten Things Every Court Should Know About Decomposing Remains</b><br><i>David Carter, PhD*; Charlotte Carter, MS; Sarah Sanger, JD</i>  |
| 12:00 PM – 1:15 PM  |           | <b>BREAK</b>  |

# JURISPRUDENCE

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## Fascinating Forensic Tools and Their Limitations

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Moderator: Dawn Boswell

- 1:15 PM – 1:45 PM     **G8**     **Forensic Genetic Genealogy: A Primer for Legal Professionals**  
*Michael Coble, MFS, PhD\**
- 1:45 PM – 2:15 PM     **G9**     **Beyond the OMG Era: The Assessment of Forensic Genetic Genealogy as a Practical Investigative Tool**  
*Colleen Fitzpatrick, MS, PhD\**
- 2:15 PM – 2:45 PM     **G10**     **Analyzing Homicide Cases Using Bayesian Networks**  
*Luciano Garofano, PhD\*; Laura Volpini, PhD\*; Giovanni Acampora, PhD; Autilia Vitiello, PhD*
- 2:45 PM – 3:00 PM     **QUESTIONS & ANSWERS**
- 3:00 PM – 3:15 PM     **BREAK**
- 3:15 PM – 4:15 PM     **G11**     **Deciding Not to Decide: The Risks Associated With Inconclusives**  
*Tiffany Roy, MSFS, JD\*; Michael Coble, MFS, PhD\**
- 4:15 PM – 4:30 PM     **G12**     **Proving Distracted Driving Behavior Using Advanced iPhone® Forensics**  
*John Carney, JD\**
- 4:30 PM – 5:00 PM     **G13**     **The Academy Standards Board (ASB) Standard Compliant Toxicology Report Content as a Tool to Support Informed Pre-Charging Communication and Testimony Planning**  
*M.J. Menendez, JD\**
- 5:00 PM – 5:30 PM     **G14**     **The Evidentiary Value of Human Remains Canine Behavior**  
*Robert Sanger, JD\**

## Poster Session

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- 11:30 AM – 1:00 PM     **G15**     **“Uninvested” Human Capital: How Much Is an Abortion?**  
*Benedetta Pia De Luca, MD\*; Maricla Marrone, MD; Alessandra Stellacci, MD; Ettore Gorini, PhD; Laura Marrone, PhD; Luigi Buongiorno, MD; Carlo Angeletti, MD; Fortunato Pititto, MD; Pierluigi Caricato, MD; Alessandro Dell’Erba, MD*
- 11:30 AM – 1:00 PM     **G16**     **An Analysis of the Utilitarian Ethical Foundation of Genetic Profile Databases in the European Court of Human Rights**  
*Bruno Trindade, MS\*; Aline Oliveira, PhD; Cesar Grisolia, PhD*
- 11:30 AM – 1:00 PM     **G17**     **Discussing the Establishment and Use of DNA Databases in Light of the European Convention on Human Rights and the European Court of Human Rights Decisions**  
*Oguzhan Sapan, LLB\*; Tugba Unsal Sapan, PhD\*; Sevil Atasoy PhD*
- 11:30 AM – 1:00 PM     **G18**     **Discussing the Use of Artificial Intelligence in the Interpretation of DNA Mixture Profiles in Terms of Constitutional and Human Rights Laws**  
*Oguzhan Sapan, LLB\*; Tugba Unsal Sapan, PhD; Sevil Atasoy PhD*

# JURISPRUDENCE

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- 11:30 AM – 1:00 PM     **G19**     **Dismissals of Driving While Intoxicated (DWI) Offenses in New Jersey**  
*Christopher Dudzik, MAS\**; *Michael Rizol, BA*; *Denise Gemmellaro, PhD\**
- 11:30 AM – 1:00 PM     **G20**     **Femicide: Scientific and Juridical Elements to Protect Vulnerable Victims**  
*Vincenzo Lusa, JD\**; *Matteo Borrini, PhD\**
- 11:30 AM – 1:00 PM     **G21**     **Improving Forensic Science Education Within a Law School Curriculum**  
*Shelby Kmidowski, BS\**
- 11:30 AM – 1:00 PM     **G22**     **Criminal Courts and Experts: The Admissibility of the Scientific Evidence in Criminal Procedures and the Transposition of the *Daubert* Standard in French Law**  
*Alice Despierres, MS\**

## Friday

### Evolution of Forensic Science in American Courtrooms

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Moderator: *J.D. Schmid*

Co-Moderator: *Amie Ely*

- 8:30 AM – 9:15 AM     **G23**     **The National Institute of Standards and Technology (NIST) Scientific Foundations of Forensic Firearm Examination: A Discussion of Validation and Proficiency Tests and the Theory of Identification**  
*Robert Thompson, MSFS\**; *Theodore Vorburger, PhD*; *Wayne Arendse, MSc*; *John Butler, PhD*; *Steven Lund, PhD*; *Heather Waltke, MFS, MPH*; *Gregory Klees, BA*
- 9:15 AM – 9:45 AM     **G24**     **The Trouble With Inconclusives in Firearms**  
*Lynn Garcia, JD\**
- 9:45 AM – 10:15 AM     **G25**     **Results From a Review of Scientific Foundations of Firearm Examination**  
*Theodore Vorburger, PhD\**; *Steven Lund, PhD*; *Heather Waltke, MFS, MPH*; *Gregory Klees, BA*; *Wayne Arendse, MSc*; *James Yen, PhD*; *Shannan Williams-Mitchem, MA*; *John Butler, PhD*; *Robert Thompson, MSFS*
- 10:15 AM – 10:30 AM     **BREAK**

### An Update on the Intersection of Forensic Science and the Law

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Moderator: *J.D. Schmid*

Co-Moderator: *Amie Ely*

- 10:30 AM – 11:00 AM     **G26**     **Junk Science and the American Criminal Justice System**  
*Chris Fabricant, JD\**
- 11:00 AM – 11:30 AM     **G27**     **Lindbergh Case: Hauptmann's Wrongful Murder Conviction**  
*Lise Pearlman, BA, JD\**; *Pete Speth, MD*; *Jamie Benvenuti, BA*
- 11:30 AM – 12:00 PM     **G28**     **Amendments to FRE 702: Some Teeth for *Daubert*?**  
*Donald Shelton, PhD, JD\**



# JURISPRUDENCE

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12:00 PM – 12:30 PM     **G29**     **You See Plastic Wrap, I See Aluminum Foil: Improving Transparency by Bridging the Communication Gap Between Scientists and Attorneys**  
*Darina Griffin, JD\**; *Lynn Schneeweis, MSFS\**; *Kristen Sullivan, MSFS*

12:30 PM – 1:45 PM     **BREAK**

## An Update on the Intersection of Forensic Science and the Law

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Moderator: *Danielle Ruttman*

Co-Moderator: *John Carney*

1:45 PM – 3:00 PM     **G30**     **Building the Bridge: Increasing Legal Awareness of the Importance of Forensics**  
*Barbara Hervey, JD\**; *Carson Guy, JD*

3:00 PM – 3:15 PM     **G31**     **A Forensic Science Informational Video Can Help Mock Jurors**  
*Devon LaBat, MSc\**; *Deborah Goldfarb, JD, PhD*; *Jacqueline Evans, PhD*;  
*Nadja Schreiber Compo, PhD*; *Cassidy Koolmees, MSc*; *Gerald LaPorte, MSFS*;  
*Kevin Lothridge, MS*; *Laura Shambaugh, PhD*

3:15 PM – 3:30 PM     **G32**     **Brady and Forensics: Disclosing Favorable Scientific Evidence**  
*Robert Smith, JD\**

3:30 PM – 3:45 PM     **BREAK**

## Challenging Forensic Admissibility

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Moderator: *Danielle Ruttman*

Co-Moderator: *John Carney*

3:45 PM – 4:30 PM     **G33**     **Challenging Retinal Hemorrhage Testimony in Court**  
*Kathleen Pakes, JD\**; *Patrick Lantz, MD*

4:30 PM – 5:00 PM     **G34**     **Drug Recognition Experts: Unreliable Expertise**  
*Steven Hernandez, BA, JD\**; *Gil Sapir, JD, MSc*; *Jay Zager*

5:00 PM – 5:30 PM     **G35**     **Experts? We Don't Need No Stinking Experts!**  
*Raymond Valerio, JD\**; *Melissa Mourges, JD*

## Saturday

### Forensic Psychology/Psychiatry and the Law

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Moderator: *Amie Ely*

Co-Moderator: *Danielle Ruttman*

8:30 AM – 9:00 AM     **G36**     **Hidden Wounds: A Trauma-Informed Approach to Sentence Reduction**  
*Anna Sofine, MD\**

9:00 AM – 10:00 AM     **G37**     **A Crash Course in Forensic Psychiatry**  
*Vivian Shnaidman, MD\**

# JURISPRUDENCE

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10:00 AM – 10:30 AM    **G38**    **The Admissibility of “Child Sexual Abuse Accommodation Syndrome” in Criminal Cases**  
*Donald Shelton, PhD, JD\**

10:30 AM – 10:45 AM    **BREAK**

## **Trending: Forensic Experts’ Liability or Qualified Immunity?**

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*Moderator: Amie Ely*

*Co-Moderator: Danielle Ruttman*

10:45 AM – 11:45 AM    **G39**    **Qualified Immunity for Forensic Experts: Should Qualified Immunity be Granted?**  
**An Interactive Session**  
*Stephanie Domitrovich, PhD, JD\*; William Nuzum, JD, BS\**

11:45 AM – 12:45 PM    **G40**    **Challenging the Forensic Scientist’s Credibility in the Courtroom: Issues of Ethics and Implicit Bias—You Are the Judges! An Interactive Session in Forensic Science and the Law**  
*Stephanie Domitrovich, JD, PhD\*; William Nuzum, JD, BS\**

# ODONTOLOGY

## Thursday

### Morning Session

Moderator: Beverly Hedgepeth

Co-Moderator: Candice Johnson

- 9:00 AM – 9:15 AM     **H1**     **“There’s a First Time for Everything”:** Using Digital Dental Equipment in a Mortuary  
*Camilla George, MSc, LLM\**
- 9:15 AM – 9:30 AM     **H2**     **A New Algorithmic-Based Model for Sex Estimation in Forensic Identification**  
*Ilenia Bianchi, MSc\*; Giorgio Oliva, DDS; Vilma Pinchi, MSc; Beatrice Bellugi, DDS; Martina Focardi, MSc; Corrado Paganelli, DMD; Domenico Dalessandri, DMD*
- 9:30 AM – 9:45 AM     **H3**     **A Case Report of an Unusual Use of Dental Identification in a Homicide Case**  
*John McDowell, DDS, MS\**
- 9:45 AM – 10:00 AM     **H4**     **Looking Forward: From Periapical Film Identifications to Cone Beam Computed Tomography (CBCT) 3D Volume Identifications**  
*Robert Wood, PhD\*; Taylor Gardner, BFSc\**
- 10:00 AM – 11:00 AM     **BREAK**

Moderator: Ashley Epperly

Co-Moderator: Khalifa Dieng

- 11:00 AM – 11:15 AM     **H5**     **The Effect of Burning on Dental Tissue: A Macroscopic and Microscopic Investigation**  
*Michal Peer, MSc\*; Rachel Sarig, DMD, PhD*
- 11:15 AM – 11:30 AM     **H6**     **A Forensic Provenance of Anjala Skeletal Remains From Strontium Isotope (<sup>87</sup>Sr/<sup>86</sup>Sr) Analysis of Their Dental Enamel Samples**  
*Jagmahender Sehrawat, PhD\*; Vaughan Grimes, PhD*
- 11:30 AM – 12:00 PM     **H7**     **Murder! Who Does the Grillz Fit?**  
*Corinne D’Anjou, DMD\**
- 12:00 PM – 1:30 PM     **BREAK**

### Afternoon Session

Moderator: Allan Raden

Co-Moderator: Emilio Nuzzolese

- 1:30 PM – 1:45 PM     **H8**     **The Applicability of Cameriere’s Third Molar Maturity Index on a French Orthopantomogram and Computed Tomography Scan Sample**  
*Olympe Mazieres, DMD\*; Eric Baccino, MD; Martrille Laurent, MD*
- 1:45 PM – 2:15 PM     **H9**     **Dental Age Assessment of United States Black and White Children: Performance Reliability of Harris and McKee (1990)**  
*Shanetha Collier, DDS, MA\*; James Lewis, DMD; Kathleen Kasper, DDS; Murray Marks, PhD; Robert Heidel, PhD*
- 2:15 PM – 2:45 PM     **H10**     **The Dental Age Estimation of Skeletal Remains: Interfacing the Shareware Program Gimp With Kvaal Dental Age Estimation (DAE) Quicksheets**  
*Walter Zoller, DMD\**
- 2:45 PM – 3:00 PM     **H11**     **The Development of Third Molars and Its Implications on Age Estimation in the Hispanic Population**  
*Jayakumar Jayaraman, PhD\*; Graham Roberts, MDS*

# ODONTOLOGY

3:00 PM – 3:30 PM

**BREAK**

*Moderator: Ray Miller*

*Co-Moderator: Mary Speicher*

3:30 PM – 4:00 PM

**H12**

**The Impact of an International Reference Data Set and Ancestral Data Sets on Dental Age Estimation**

*Graham Roberts, MDS\*; Derek Draft, DDS; Jayakumar Jayaraman, PhD; Victoria Lucas, PhD*

4:00 PM – 4:15 PM

**H13**

**The Impact of Ancestral Reference Data Sets of Third Molars on Dental Age Estimation**

*Victoria Lucas, PhD\*; James Lewis, DMD; Kathleen Kasper, DDS; Jayakumar Jayaraman, PhD; Graham Roberts, MDS*

4:15 PM – 4:30 PM

**H14**

**The Applications of X-Ray Microtomography (Micro-CT) in Studying Age-Related Tooth Morphological Changes: A Scoping Review**

*Muhammad Zaid Zainuddin, MMedSc\*; Tan Su Keng, PhD; Noor Shafini Mohamad, PhD; Mohd Yusmiaidil Putera Mohd Yusof, PhD*

4:30 PM – 4:45 PM

**H15**

**Validation of Automated Dental Age Assessment**

*Salem Altalie, DDS, MSc\**

## Poster Session

11:30 AM – 1:00 PM

**H16**

**The Accuracy of Age Estimation and Assessment of the 18-Year Threshold Based on Second and Third Molar Maturity in Korean and Japanese Populations**

*Sang-Seob Lee, DPhil\**

11:30 AM – 1:00 PM

**H17**

**Intraoral Digital Record Assessment as Forensic and Legal Evidence: From a Paradigm to Reality**

*Ana Corte-Real, PhD\*; Rita Ribeiro, BSH; Tiago Nunes, MS*

11:30 AM – 1:00 PM

**H18**

**Postmortem Interval (PMI) Estimation on Dental DNA Studied by Next Generation Sequencing (NGS): A Pilot Study**

*Angelica Zibetti, MD\*; Umberto Rosini, MD; Matteo Sacco, MD\*; Martino Maesani, MD; Carmen Scalise, PhD, MD; Fabrizio Cordasco, MD; Maria Manno, MD; Saverio Gualtieri, MD\*; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD\**

11:30 AM – 1:00 PM

**H19**

**Teeth Hold Clues: A Unique Positive ID Case of Burned and Fragmented Remains**

*Megha Shah, DDS\*; Janice Klim Lemann, DDS*

## Friday

### Morning Session

*Moderator: John Nase*

*Co-Moderator: Sarah Friend*

9:00 AM – 9:15 AM

**H20**

**Report Writing Using Word Developer: A Streamlined and Systematic Approach to Comprehensive Documentation**

*Peter Marsh, DDS\*; J. Carol Geer, DDS*

9:15 AM – 9:45 AM

**H21**

**Standards Development Activities in Forensic Odontology**

*Kenneth Aschheim, DDS\**

9:45 AM – 10:15 AM

**H22**

**Bitemark Photographic Evidence: Recognizing the Limits**

*Derek Draft, DDS\*; D. Eric Johnson*

# PATHOLOGY/BIOLOGY

## Wednesday

### Poster Session

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- |                    |            |   |
|--------------------|------------|---|
| 11:30 AM – 1:00 PM | <b>11</b>  | <b>Internal Graze Gunshot Wounds</b><br><i>Nikoli Nickson, BA*</i> ; <i>Joyce deJong, DO</i> ; <i>Joseph Prahlow, MD</i>  |
| 11:30 AM – 1:00 PM | <b>12</b>  | <b>One Nail Drives Out Another: An Atypical Suicide</b><br><i>Marigrazia Calbano, MD*</i> ; <i>Antonio De Donno, PhD</i> ; <i>Federica Mele, MD</i> ;<br><i>Mirko Leonardelli, MD</i> ; <i>Gianluca Musci, MD</i> ; <i>Stefano Duma, MD</i> ; <i>Gianluca Gravili, MD</i> ;<br><i>Enrica Macorano, MD</i> ; <i>Giovanni De Gabriele, MD</i> ; <i>Francesco Introna, MD</i>  |
| 11:30 AM – 1:00 PM | <b>13</b>  | <b>A Case of Autoerotic Death by Electrocution</b><br><i>Yoo Min Ahn, DO, MS*</i> ; <i>Chester Gwin, MD</i>   |
| 11:30 AM – 1:00 PM | <b>14</b>  | <b>A Case of Mechanical Asphyxia Due to a Bowling Pinsetter Machine and a Brief Review of the Literature</b><br><i>Adam Gonzalez, MD*</i> ; <i>Lucas Wieck, MD</i> ; <i>J. Keith Pinckard, MD, PhD</i>  |
| 11:30 AM – 1:00 PM | <b>15</b>  | <b>An Unusual Suicide With Multiple Gunshot Injuries to the Head From Two Different Weapons</b><br><i>Mihaela Georgieva, MD</i> ; <i>Martin Angelov, MD</i> ; <i>Kamen Peev, MD</i> ; <i>Ilina Brainova, MD, PhD</i> ;<br><i>Verzhiniya Stefanova, MD.</i> ; <i>Alexandar Alexandrov, MD, PhD</i> ; <i>Metodi Goshev, MD, PhD</i> ;<br><i>Lorenzo Gitto, MD</i> ; <i>Biliana Mileva, MD*</i>  |
| 11:30 AM – 1:00 PM | <b>16</b>  | <b>An Assault on Coagulation: A Complex Suicide by Ingestion of Warfarin and Stab Wounds</b><br><i>Martina Padovano, MD*</i> ; <i>Federico Manetti, MD</i> ; <i>Davide Radaelli, MD</i> ; <i>Maria Chiara David, PhD</i> ;<br><i>Stefano D’Errico, MD, PhD</i> ; <i>Matteo Scopetti, MD</i>   |
| 11:30 AM – 1:00 PM | <b>17</b>  | <b>Complex Deaths: Murder or Suicide? A Report of Three Cases</b><br><i>Maria Antonella Bosco, MD*</i> ; <i>Valentina Milone, MD*</i> ; <i>Roberta Bibbò, MD*</i> ;<br><i>Michele Ahmed Antonio Karaboue, LLM*</i> ; <i>Francesco Carpano, MD*</i> ; <i>Santina Cantatore, MD*</i> ;<br><i>Stefania De Simone, MD*</i>  |
| 11:30 AM – 1:00 PM | <b>18</b>  | <b>WITHDRAWN</b>  |
| 11:30 AM – 1:00 PM | <b>19</b>  | <b>The Decapitation of a Motorcyclist Wearing a Full-Face Helmet in a Crash Against the Guardrail: A Case Report</b><br><i>Laura Panata, MD*</i> ; <i>Isabella Mercurio, MD</i> ; <i>Michela Ferrara, MD</i> ; <i>Massimo Lancia, MD</i> ;<br><i>Mauro Bacci, MD</i>  |
| 11:30 AM – 1:00 PM | <b>110</b> | <b>Forensic Aspects of Overkilling in Femicides: A Comparison of Forensic Case Series</b><br><i>Martino Maesani, MD*</i> ; <i>Umberto Rosini, MD</i> ; <i>Matteo Sacco, MD*</i> ; <i>Angelica Zibetti, MD</i> ;<br><i>Carmen Scalise, PhD, MD</i> ; <i>Fabrizio Cordasco, MD</i> ; <i>Saverio Gualtieri, MD*</i> ; <i>Maria Manno, MD</i> ;<br><i>Giulio Pulpito, MD*</i> ; <i>Angela Carbone, MD</i> ; <i>Roberto Raffaele, BE*</i> ; <i>Valerio Aquila, PsyD*</i> ;<br><i>Palmo Tavernese, MD</i> ; <i>Pietrantonio Ricci, PhD, MD</i> ; <i>Isabella Aquila, PhD, MD*</i> |
| 11:30 AM – 1:00 PM | <b>111</b> | <b>Intracranial Hemorrhage/Thrombosis in Infancy: Trauma or Not?</b><br><i>Kyla Jorgenson, MD, MS*</i> ; <i>Zachary Michalick, DM</i> ; <i>Jan Gorniak, DO</i> ; <i>Andrea Wiens, DO, MS</i>  |
| 11:30 AM – 1:00 PM | <b>112</b> | <b>Live(r) and Let Die: A Murder Case of a Woman Suffering From Alcoholic Hepatopathy</b><br><i>Mirella Sabatino, MD*</i> ; <i>Valeria Prandini, MD</i> ; <i>Domenico De Stradis, MD</i> ;<br><i>Alessandra Radogna, MD</i> ; <i>Claudia Vignali, MSc</i> ; <i>Luca Morini, PhD</i> ; <i>Gulnaz Javan, PhD</i> ;<br><i>Silvia Visonà, PhD</i> ; <i>Matteo Moretti, MD</i>   |

# PATHOLOGY/BIOLOGY

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- 11:30 AM – 1:00 PM **I13** **Men as Victims of Intimate Partner Violence: A Ten-Year Retrospective Study**  
*Biliana Mileva, MD\**; *Mihaela Georgieva, MD*; *Martin Angelov, MD*; *Kamen Peev, MD*;  
*Ilina Brainova, MD, PhD*; *Verzhiniya Stefanova, MD*; *Alexandar Alexandrov, MD, PhD*;  
*Lorenzo Gitto, MD*; *Ivan Tsranchev, MD, PhD*; *Metodi Goshev, MD, PhD*
- 11:30 AM – 1:00 PM **I14** **Necks, Saws, and Video Tape: Using Surveillance Footage to Determine Manner of Death**  
*Justin Lohmann, DM\**; *Neil Haycocks, MD, PhD*; *Amanda Ho, MD*
- 11:30 AM – 1:00 PM **I15** **Sharp Force Fatalities: The Application of Bayes' Theorem to Evaluate the Manner of Death**  
*Michele D'Aleo, MD\**; *Marco Irmici, MD\**; *Guido Pelletti, MD\**; *Paolo Fais, MD, PhD*;  
*Arianna Giorgetti, MD*; *Susi Pelotti, MD*
- 11:30 AM – 1:00 PM **I16** **Shotgun Deaths in Maryland: A Ten-Year Review**  
*Joseph Mininni, DM\**; *Stephanie Dean, MD*; *Jack Titus, MD*
- 11:30 AM – 1:00 PM **I17** **Astroglial and Microglial Reactions in Fatal Head Injury Decedents: A Survival-Time Correlation Study**  
*Meenakshi Sharma, Msc\**; *Arulselvi S., MBBS, MD*; *Vaishali Suri, MBBS, MD*;  
*Shyam Prakash, PhD*; *Purva Mathur, MBBS, MD*; *Rajesh Malhotra, MBBS, MS*;  
*Deepak Agrawal, MBBS, MD*; *Ravindra Mohan, PhD*; *Anupama Raina, PhD*;  
*Sanjeev Lalwani, MBBS, MD*
- 11:30 AM – 1:00 PM **I18** **Bigger Weapons Do Not Kill You More: A Dart Through the Head Is Sometimes Not Enough!**  
*Gianmarco Di Palma, MD*; *Valeria Prandini, MD*; *Mirella Sabatino, MD*;  
*Eugenio Gallotti, MD\**; *Gulnaz Javan, PhD*; *Silvia Visonà, PhD*; *Luisa Andreello, MD, PhD*;  
*Matteo Moretti, MD*
- 11:30 AM – 1:00 PM **I19** **Burial at Sea**  
*Joseph Curran, MD\**; *Darin Trelka, MD, PhD*
- 11:30 AM – 1:00 PM **I20** **Decapitation and Crushing by Combine Harvester: An Infernal Machine**  
*Eleonora Mezzetti, MD\**; *Ilaria Marcacci, MD*; *Carla Occhipinti, MD*; *Fabio Del Duca, MD*;  
*Aniello Maiese, MD*
- 11:30 AM – 1:00 PM **I21** **A Review of Violent and Unnatural Deaths in Which the Manner of Death Is Undetermined**  
*Laura Bagwell, MD\**; *Erica Curry, MD*

## Thursday—Session I

### Natural Disease

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Moderator: *Erin Brooks*

Co-Moderator: *Sterling McLaren*

- 8:00 AM – 8:15 AM **I22** **A New Approach on the Timing of a Dynamic Process: The Pulmonary Thromboembolism**  
*Maria Bonasoni, MD\**; *Paolo Fais, MD, PhD*; *Linda Torelli, MD*; *Elisabetta Faedda, MD*;  
*Matilde Sassani, MD, PhD*; *Rossana Cecchi, MD*
- 8:15 AM – 8:30 AM **I23** **Certification of Deaths of Persons With Reported Histories of Seizures or Epilepsy**  
*Abigail Grande, MPH\**; *Marcel Castor, MD*; *Riley Davis, BA*; *Allison Deemter, MA*;  
*Lillian O'Donnell, MA*; *Amanda Fisher-Hubbard, MD*

# PATHOLOGY/BIOLOGY

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8:30 AM – 8:45 AM	<b>I24</b>	<b>Neuropathology of Middle Meningeal Artery Embolization for Subdural Hematoma</b> <i>Avneesh Gupta, MD*</i> ; <i>Amelia Baxter-Stoltzfus, MD</i> ; <i>Edwin Partovi, MD</i> ; <i>Rebecca Folkerth, MD</i>
8:45 AM – 9:00 AM	<b>I25</b>	<b>COVID-19-Related Myocarditis: Are We There Yet?</b> <i>Davide Radaelli, MD*</i> ; <i>Denny Fuliani, MD</i> ; <i>Elio Santangelo, MD</i> ; <i>Pier Riccardo Bergamini, MD</i> ; <i>Diana Bonuccelli, MD</i> ; <i>Stefano D’Errico, MD, PhD</i>
9:00 AM – 9:15 AM	<b>I26</b>	<b>Is It Really a Channelopathy? A Systematic Review of the Alterations Found at Autopsy in Brugada Syndrome</b> <i>Simone Grassi, MS*</i> ; <i>Francesca Cazzato, MS</i> ; <i>Massimo Zedda, MD</i> ; <i>Mònica Coll, PhD</i> ; <i>Martina Focardi, MS</i> ; <i>Oscar Campuzano, PhD</i> ; <i>Ramon Brugada, MD, PhD</i> ; <i>Vilma Pinchi, MS</i> ; <i>Antonio Oliva, MS, PhD</i>
9:15 AM – 9:30 AM	<b>I27</b>	<b>Subnuclear Renal Tubular Vacuoles in Alcoholics</b> <i>Finn Auld, BMBS*</i> ; <i>Jacqueline Parai, MD</i> ; <i>Chris Milroy, MD, LLB</i>
9:30 AM – 10:00 AM	<b>I28</b>	<b>Updates in Normal Organ Weights: A Review of 4,000+ Cases From 2009 to 2014</b> <i>Meagan Chambers, MD, MSc*</i> ; <i>Harold Sanchez, MD</i>
10:00 AM – 10:15 AM		<b>BREAK</b>

## Injury

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Moderator: Gregory Schmunk

Co-Moderator: Lorenzo Gitto

10:15 AM – 10:30 AM	<b>I29</b>	<b>Discordance of Reported History and Diagnosis of Mental Illness in Suicides</b> <i>Nicole Panzica, BS*</i> ; <i>Brandi McCleskey, MD</i>
10:30 AM – 10:45 AM	<b>I30</b>	<b>Fatal Injuries in Traffic Accidents: A Retrospective Analysis of 294 Medicolegal Autopsies at the University Hospital of Montpellier</b> <i>Emmanuel Margueritte, MD*</i> ; <i>Eric Baccino, MD</i> ; <i>Maguette Niang, MD</i>
10:45 AM – 11:00 AM	<b>I31</b>	<b>Fatalities at the Astroworld Music Festival in Houston, Texas</b> <i>Hannah Jarvis, MRCS*</i> ; <i>Merrill Hines, MD</i>
11:00 AM – 11:15 AM	<b>I32</b>	<b>Female Homicide Victims in Cook County, Illinois: A Retrospective Review</b> <i>Lorenzo Gitto, MD*</i> ; <i>Ponni Arunkumar, MD</i>
11:15 AM – 11:30 AM	<b>I33</b>	<b>A Five-Year Retrospective Analysis of On-The-Job Deaths in Shelby County, Tennessee</b> <i>Sarah Troyer, BA*</i> ; <i>Danielle Harrell, DO</i> ; <i>Scott Collier, DM</i>
11:30 AM – 11:45 AM	<b>I34</b>	<b>A Fatal Abdominal Trauma Following a Fall From Height: Trauma Score, Mortality Meeting, and the Forensic Pathologist</b> <i>Siddhartha Das, MBBS, MD*</i>
11:45 AM – 12:00 PM	<b>I35</b>	<b>Injury Pattern in Electric Scooter Accidents: A Case Report</b> <i>Giovanni Aulino, MD*</i>
12:00 PM – 1:00 PM		<b>BREAK</b>

# PATHOLOGY/BIOLOGY

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## The Bigger Picture

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Moderator: M.J. Menendez

Co-Moderator: Kimberly Johnson

- 1:00 PM – 1:15 PM     **I36**     **The Categorization of Autopsies as a Mechanism to Identify Possible Human Rights Violations**  
*Eileen Buitrago, MSc\*; Alexander Sabogal, MSc*
- 1:15 PM – 1:30 PM     **I37**     **Mafia Organizations in Italy: Useful Markers in Attributing Murders to Specific Groups**  
*Simona Vittorio, MS\*; Giovanni Gurgoglione, MD; Roberta Bibbò, MD; Luigi Cipolloni, MD; Giovanni Pollice, MD; Diego Moro, MD; Giuseppe Bertozzi, MD; Fabio Mariottini, MD*
- 1:30 PM – 1:45 PM     **I38**     **Identifying Stress Factors and Related Coping Mechanisms Among Forensic Pathologists**  
*Danielle Morgan, BS\*; Katelyn Bolhofner, PhD*
- 1:45 PM – 2:00 PM     **I39**     **Strengthening Forensic Pathology Opinions With the Bayesian Approach for Evidence Interpretation: From Theory to Practice**  
*Hans De Boer, MD, PhD\*; Judith Fronczek, MD, PhD; Matthew Lynch, MBBS, LLB; Charles Berger, PhD*
- 2:00 PM – 2:30 PM     **I40**     **Providing Opinions on the “Degree of Force”: Problems and a Solution**  
*Hans De Boer, MD, PhD\*; Charles Berger, PhD; Soren Blau, PhD*
- 2:30 PM – 2:45 PM     **I41**     **The Impacts of Governing Agencies: A Comparison of Differential Resources in the Medicolegal Death Investigation System Patchwork**  
*Kelly Keyes, BS\*; Hope Smiley-McDonald, PhD; Sean Wire, PhDc; Crystal Daye, MPA; Kathryn Greenwell, BA; Jeri Roper-Miller, PhD*
- 2:45 PM – 3:00 PM     **I42**     **Standards Development Activities in Medicolegal Death Investigation and Forensic Pathology**  
*J. Keith Pinckard, MD, PhD\**
- 3:00 PM – 3:15 PM     **BREAK**

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## New Perspectives

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Moderator: Marisa Jacob-Leonce

Co-Moderator: Lorren Jackson

- 3:15 PM – 3:30 PM     **I43**     **Postmortem Findings in Three Cases of Vaccine-Induced Death: The Autopsy Role in Vaccine-Induced Thrombotic Thrombocytopenia (VITT) Diagnosis and Comprehension of the Pathophysiology**  
*Chiara Stassi, MD\*; Gennaro Baldino, MD; Cristina Mondello, MD; Fabrizio Perri, MD; Daniela Sapienza, MD; Alessio Asmundo, MD; Elvira Ventura Spagnolo, MD\**
- 3:30 PM – 4:00 PM     **I44**     **Thrombosis Patterns of COVID-19 Vaccine-Induced Thrombotic Thrombocytopenia (VITT): “Order and Method” in Forensic Pathology**  
*Raffaella Vetrini, BS\*; Stefano D’Errico, MD, PhD; Vittorio Fineschi, MD, PhD; Costantino Ciallella, MD; Benedetta Baldari, MD; Antonello Cirnelli, MD; Stefano Pizzolitto, MD*
- 4:00 PM – 4:15 PM     **I45**     **A Multidisciplinary Analysis of Partial Human Remains Found Under the Sea in Venezuela, Investigated With an International Collaboration During the COVID-19 Pandemic**  
*Paola Magni, PhD\*; Iris Carma, MS; Lisbeth Borjas, MS; Fanny Díaz, MD; Marlenis Villarroel, MS; Edda Guareschi, MD*



# PATHOLOGY/BIOLOGY

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- 4:15 PM – 4:45 PM **I46** **The Final Frontier: Human Decomposition in Low Earth Orbit**  
*Sherrri Damlo, MS\*; Lerah Sutton, PhD\*; Craig Damlo, MSc*
- 4:45 PM – 5:00 PM **I47** **Unique Medical Identity Card (UMID): The First DNA Database and Identification Portal in India for the Identification of Unidentified Bodies and Missing Persons**  
*Chittaranjan Behera, MD\**

## Poster Session

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- 11:30 AM – 1:00 PM **I48** **A Rare Case of Cardiac Tamponade by the Surgical Correction of a Hiatal Hernia**  
*Federica Spina, MD\*; Eleonora Mezzetti, MD; Julia Lazzari, MD; Luigi Papi, MD*
- 11:30 AM – 1:00 PM **I49** **An Uncommon Cause of Gastrointestinal Bleeding in the Forensic Setting**  
*Civan Altunkaynak, MD\*; S.E. Presnell, MD; Emma Hawkins, BS*
- 11:30 AM – 1:00 PM **I50** **Cassette Agitation as a Time-Saving Method to Improve Lung Insufflation and Histology**  
*Catherine Perez, MD\*; Catherine Morris, MD; Teresa Nguyen, MD; Omar Rayes, MD; LokMan Sung, MD*
- 11:30 AM – 1:00 PM **I51** **Congenital Absence of the Left Circumflex Artery in Multiple Myocardial Ischemia: A Case Report**  
*Francesca Capello, MD\*; Marta Moretti, MD\*; Gaetano Maria De Ferrari, MD, PhD; Giancarlo Di Vella, PhD*
- 11:30 AM – 1:00 PM **I52** **Death From an Unexpected Superior Venous Laceration During the Implantation of a Leadless Intracardiac Pacemaker: The Role of the Forensic Pathologist.**  
*Alessandra Cicchini, MD\*; Camilla Bonci, MD\*; Giancarlo Di Vella, PhD*
- 11:30 AM – 1:00 PM **I53** **A Fatal Massive Hemoperitoneum From a Ruptured Corpus Luteum Cyst**  
*Neil Haycocks, MD, PhD\*; Justin Lohmann, MD; Erik Christensen, MD*
- 11:30 AM – 1:00 PM **I54** **An Intimal Sarcoma of the Abdominal Aorta: An Unexpected Finding Only Possible by Autopsy!**  
*Joana Madeira, MS\*; Eduardo Coutinho, MS; Rui Almeida, MS; João Fraga, MS; Mário Silva, MD; Maria Augusta Cipriano, MD*
- 11:30 AM – 1:00 PM **I55** **Looks Can Be Deceiving: Evaluating Beyond Hepatic Pathology in the Assessment of Chronic Alcoholism**  
*Kylila Tucker, BA\*; Juliette Scantlebury, MD*
- 11:30 AM – 1:00 PM **I56** **The Body in the Mirror: An Autopsy in a Case of Situs Inversus Totalis**  
*Martina Padovano, MD; Matteo Scopetti, MD; Tommaso Livieri, MD\*; Costantino Ciallella, MD; Federico Manetti, MD; Paola Frati, PhD; Vittorio Fineschi, MD, PhD*
- 11:30 AM – 1:00 PM **I57** **The Fulminant Fat Emboli Syndrome: Two Autopsy Case Reports and the Use of Platelet and Fibrinogen Markers**  
*Laetitia Leveque, MD\*; Elise Arbefeville, MD\*; Eric Baccino, PhD; Pierre-Antoine Peyron, MD; Olivia Plé, MD; Aurélie Adriansen, MD*
- 11:30 AM – 1:00 PM **I58** **Acute Hemorrhagic Leukoencephalitis Features Associated with COVID-19: A Case Report and Literature Review**  
*Jolee Suddock, MD\*; Clarissa Krinsky, MD; Heather Jarrell, MD*

# PATHOLOGY/BIOLOGY

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- 11:30 AM – 1:00 PM      **I59**      **An Overlook on the Contribution of Postmortem Molecular Biology for the Diagnosis of SARS-CoV-2-Related Systemic Thrombosis as Cause of Death**  
*Daniela Sapienza, MD\**; *Chiara Stassi, MD\**; *Gennaro Baldino, MD*; *Cristina Musolino, BS*;  
*Teresa Pollicino, MD*; *Alessio Asmundo, MD*
- 11:30 AM – 1:00 PM      **I60**      **Lymphohistiocytic Myocarditis Following a Messenger RNA (mRNA) -Based COVID-19 Vaccine: A Case Report**  
*David Rosenbaum, MD\**; *Jeffrey Barnard, MD*
- 11:30 AM – 1:00 PM      **I61**      **A Strategy for Effective Collection and Communication of Preliminary Forensic Information**  
*Benjamin DePrest\**; *Lisa Kohler, MD*; *Kristy Waite, DO*; *Robert Shott, MD*
- 11:30 AM – 1:00 PM      **I62**      **The Identification Process of an Unidentified Transgender Woman**  
*Sonia Kominek, BA\**; *Ellen Moffatt, MD*
- 11:30 AM – 1:00 PM      **I63**      **An Analysis of Changes in Protein Markers Since the Moment of Death (“Time 0”) for the Estimation of the Early Postmortem Interval (PMI): An Experimental Study**  
*Matteo Sacco, MD\**; *Rocco Turturiello*; *Natalia Malara, PhD, MD*; *Saverio Gualtieri, MD\**;  
*Santo Gratteri, PhD, MD*; *Antonio Oliva, MS, PhD*; *Francesco Ausania, MD, PhD\**;  
*Nicola Pigaiani, MD\**; *Pietrantonio Ricci, PhD, MD*; *Isabella Aquila, PhD, MD\**
- 11:30 AM – 1:00 PM      **I64**      **WITHDRAWN**
- 11:30 AM – 1:00 PM      **I65**      **A Comparative Use of Aqueous Humor 1H Nuclear Magnetic Resonance (NMR) Metabolomics and Potassium Concentration for Postmortem Interval (PMI) Estimation in an Animal Model**  
*Alberto Chighine, MD\**; *Emanuela Locci, BS*; *Matteo Nioi, MD*; *Fabio De-Giorgio, MD*;  
*Roberto Demontis, MD*; *Rossella Gottardo, BS*; *Franco Tagliaro, MD*; *Ernesto d’Aloja, MD*
- 11:30 AM – 1:00 PM      **I66**      **Metabolomics Improves the Histopathological Diagnosis of Asphyxial Deaths: An Animal Proof-of-Concept Model**  
*Alberto Chighine, MD\**; *Matteo Nioi, MD*; *Giulio Ferino, BS*; *Fabio De-Giorgio, MD*;  
*Ernesto d’Aloja, MD*; *Emanuela Locci, BS*
- 11:30 AM – 1:00 PM      **I67**      **Delayed Colonization of Concealed Carrion in a Laboratory Study**  
*Jodie-A Warren, PhD\**
- 11:30 AM – 1:00 PM      **I68**      **Evaluating Storage Solutions for Entomological Gene Expression Work to Better Coincide With Common Practices for Entomological Evidence**  
*Joshua Smith, PhD\**
- 11:30 AM – 1:00 PM      **I69**      **First Survey of Forensically Relevant Diptera in the Republic of the Gambia**  
*Peter Dampha, BS\**
- 11:30 AM – 1:00 PM      **I70**      **Forensically Important Insects Collected From Human Bodies in New Jersey**  
*Denise Gemmellaro, PhD\**; *Gloria Raise\**; *Amanda Joy O’Connor, BS*; *Jessica Harlow, BA*;  
*Reagan McRae, BS*; *Andrew Falzon, MD*

# PATHOLOGY/BIOLOGY

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## Thursday—Session II

### Multidisciplinary Session: Pathology/Biology and Toxicology

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Moderator: Tracy Halvorson

Co-Moderator: Kristin Kahl

- 1:00 PM – 1:15 PM     **L46**     **An Unusual Case of Misrepresented Cocaine Powder That Resulted in Fatal and Non-Fatal Intoxications Involving the Novel Synthetic Opioid Etodesnitazene**  
*Alex Krotulski, PhD\**; *Stephany Fiore, MD*; *Daniel Anderson, MS*; *Sara Walton, MS*;  
*Brianna Peterson, PhD*; *Donna Papsun, MS*; *Joshua DeBord, PhD*; *Barry Logan, PhD*
- 1:15 PM – 1:30 PM     **L47**     **I Believe I Can Fly: Hallucinogenic/Psychedelic Drugs Found in Fall-From-Height Cases in Miami-Dade County, Florida**  
*Marissa Finkelstein, MS\**; *George Hime, MS*; *Diane Boland, PhD*
- 1:30 PM – 1:45 PM     **L48**     **Synthetic Cannabinoids Adulterated With Brodifacoum—Part II: The Florida Experience**  
*Robert Middleberg, PhD\**; *Justin Arnold, DO, MPH*; *Alexandra Funk, PharmD*
- 1:45 PM – 2:00 PM     **L49**     **Adverse Effects of Veterinary Pharmaceuticals as Toxic Adulterating Agents in Illicit Drug Deaths**  
*Barry Logan, PhD\**; *Alex Krotulski, PhD*; *Amanda Mohr, MS*; *Thom Browne, Jr., MA*
- 2:00 PM – 2:15 PM     **L50**     **A Compilation of Postmortem Vitreous Fluid Data for Pediatric Cases**  
*Breanne Vance, BA\**; *Kari Midthun, PhD*; *Jennifer Swatek, MS*; *Fabio Oldoni, PhD*
- 2:15 PM – 2:30 PM     **L51**     **Postmortem Formation of Ethanol: Is N-Propanol a Reliable Marker? A Proof-of-Concept Study Using a Real-Environment Experimental Set-Up**  
*Nicola Pigaiani, MD\**; *Giacomo Musile, PhD*; *Francesco Ausania, MD, PhD*; *Daniel Dye, MD*;  
*Gregory Davis, MD*; *Franco Tagliaro, MD*; *Antonio Oliva, MD, PhD*; *Federica Bortolotti, PhD*
- 2:30 PM – 2:45 PM     **L52**     **A Quantitative Analysis of Fentanyl and Major Metabolites From Empty Puparia and Adult Blow Flies Via QuEChERS Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis**  
*Joseph Cox, PhD\**; *Katherine Davis*; *Kylea Morris, BS*; *Rachel Mohr, PhD*; *Joseph DelTondo, DO*;  
*Luis Arroyo, PhD*
- 2:45 PM – 3:00 PM     **L53**     **Toxicology Laboratory Findings From the 2018 Census of Medical Examiner and Coroner Offices**  
*Jeri Roper-Miller, PhD\**; *Hope Smiley-McDonald, PhD*; *Katherine Bollinger, MS*
- 3:00 PM – 3:15 PM     **BREAK**

# PATHOLOGY/BIOLOGY

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Moderator: Marissa Finkelstein

Co-Moderator: Susan Ely

- 3:15 PM – 3:30 PM     **171**     **An Alleged Patricide by Americium-241 Poisoning**  
*Wendy Gunther, MD\**
- 3:30 PM – 3:45 PM     **172**     **Fatal Butane Acute Intoxication in Custody—Pitfalls and Recommendations: An Analysis of Six Cases**  
*Michela Peruch, BS\*;* *Luigi Cipolloni, MD;* *Stefania De Simone, MD;* *Maria Chiara David, PhD;* *Monica Concato, BS;* *Martina Zanon, BS;* *Riccardo Addobbati, BS*
- 3:45 PM – 4:00 PM     **173**     **Death as a Consequence of Cardiorespiratory Arrest Caused by a Cocaine-Induced Generalized Seizure: Toxicological Data in a Case Report**  
*Isabella Mercurio, MD\*;* *Laura Panata, MD;* *Michela Ferrara, MD;* *Mauro Bacci, MD;* *Cristina Gambelunghe, MD;* *Massimo Lancia, MD*
- 4:00 PM – 4:15 PM     **174**     **Sodium Nitrite Poisoning: A Case Series of an Emerging Suicide Mechanism**  
*Ethan Blocher-Smith, MS, DO\*;* *Elizabeth Douglas, MD;* *Joseph Prahlow, MD*
- 4:15 PM – 4:30 PM     **175**     **The Use of Over-the-Counter Tests to Detect Pregnancy in Postmortem Urine and Vitreous Fluid**  
*Marianne Hamel, MD, PhD\*;* *Andrew Falzon, DM*

## Friday—Session I

### 2023 Jay Dix Lecture Series

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Moderator: Michael Graham

- 9:00 AM – 9:10 AM     **176**     **Jay Dix Memorial Bonus Day Introduction**  
*Joseph A. Prahlow, MD\*;* *Andrew M. Baker, MD\*;* *James R. Gill, MD\*;* *Susan F. Ely, MD\*;* *Joyce L. deJong, DO\**
- 9:10 AM – 10:00 AM     **176**     **Deaths Due to the Environment**  
*Joseph A. Prahlow, MD\**
- 10:00 AM – 10:15 AM     **BREAK**
- 10:15 AM – 11:05 AM     **176**     **Firearms Injuries**  
*Andrew M. Baker, MD\**
- 11:05 AM – 12:00 PM     **176**     **Blunt Force Injuries**  
*James R. Gill, MD\**
- 12:00 PM – 2:00 PM     **BREAK**
- 2:00 PM – 2:50 PM     **176**     **Sudden Unexpected Deaths in Adults**  
*Susan F. Ely, MD\**
- 2:50 PM – 3:05 PM     **BREAK**
- 3:05 PM – 3:55 PM     **176**     **Deaths Associated With Sports and Recreation**  
*Joyce L. deJong, DO\**

# PATHOLOGY/BIOLOGY

## Friday—Session II

### Forensic Entomology

Moderator: Casey Flint

Co-Moderator: Owen Middleton

- 8:00 AM – 8:15 AM **177** **A Non-Destructive DNA Extraction Technique for Application on Insect Puparia (Diptera: Calliphoridae)**  
*Sydnee Wedel, BSc; Jonathan Parrott, PhD\**
- 8:15 AM – 8:30 AM **178** **The American Board of Forensic Entomology-Certified Workshops: How Collaborative Efforts Between Researchers, Practitioners, and Professionals Continue to Refine and Strengthen the Discipline**  
*Jennifer Rhinesmith-Carranza, DPhil\*; Casey Flint, DPhil; Jeffery Tomberlin, PhD*
- 8:30 AM – 8:45 AM **179** **An Overview of the Decomposition Process During North Dakota Extreme Winter Temperatures**  
*Lavinia Iancu, PhD\**
- 8:45 AM – 9:00 AM **180** **An Analysis of the Decomposition Process in Two Restricted-Access Environments in a Temperate Climate: Suitcases Versus Wheeled Bins**  
*Hannah Andrews, MSc; Ian Dadour, PhD; Paola Magni, PhD\**
- 9:00 AM – 9:15 AM **181** **Decomposition in the Desert: An Analysis of Initial Insect Activity on Swine Remains**  
*Lauren Weidner, PhD\**
- 9:15 AM – 9:30 AM **182** **Impacts of Climate Change in Forensic Entomology Casework**  
*Michelle Sanford, MS, PhD\**
- 9:30 AM – 9:45 AM **183** **Generating Fluorescent Blow Fly Strains to Aid in the Validation of Postmortem Interval Estimates**  
*Amber MacInnis, MS\*; Andre Luis da Costa da Silva, PhD; Anthony Bellantuono, PhD; Matthew DeGennaro, PhD; Jeffrey Wells, PhD*
- 9:45 AM – 10:00 AM **184** **The Impact of Temperature and Diet on the Development of the House Fly, *Musca Domestica* (Linnaeus) (Diptera: Muscidae)**  
*Casey Flint, DPhil\*; Jennifer Rhinesmith-Carranza, DPhil; Riley Bell, BS; Jeffery Tomberlin, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)*
- 10:00 AM – 10:15 AM **BREAK**

### Forensic Entomology and the Microbiome

Moderator: Lavinia Iancu

Co-Moderator: Jennifer Rhinesmith-Carranza

- 10:15 AM – 10:30 AM **185** **The Influence of Biomass and Bisection of Remains on the Production of Necrophagous Flies**  
*Samantha Sawyer, PhD\**
- 10:30 AM – 10:45 AM **186** **The Effect of Plastic Bags on Decomposition and Necrophagous Fly Composition**  
*Kristi Bugajski, PhD\**
- 10:45 AM – 11:00 AM **187** **Cadaver Microbial Signatures of the Submandibular Glands and Thyroid for Forensic Investigations**  
*Sheree Finley, PhD\*; Matteo Moretti, MD; Silvia Visonà, PhD; Gulnaz Javan, PhD\**

# PATHOLOGY/BIOLOGY

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11:00 AM – 11:15 AM	<b>188</b>	<b>Current Challenges in Protein Degradation-Based Postmortem Interval (PMI) Estimation</b> <i>Stefan Pittner, PhD*</i> ; <i>Fabio Monticelli, PhD</i>
11:15 AM – 11:30 AM	<b>189</b>	<b>First Observations on the Environmental Impact of Terrestrial Body Decomposition Within a Canadian Continental, Humid (Dfb) Climate</b> <i>Emily Pecci, BSc*</i> ; <i>Shari Forbes, PhD</i> ; <i>Francois Guillemette, PhD</i>
11:30 AM – 11:45 AM	<b>190</b>	<b>Metabolite Profiles and Expressed Microbial Metabolic Pathways in Human Decomposition-Impacted Soils</b> <i>Jennifer Baer, MS</i> ; <i>Lois Taylor, PhD*</i> ; <i>Neal Stewart, PhD</i> ; <i>Amy Mundorff, PhD</i> ; <i>Dawnie Steadman, PhD</i> ; <i>Jennifer DeBruyn, PhD</i>
11:45 AM – 12:00 PM	<b>191</b>	<b>COVID-19 and Brain-Heart-Lung Crosstalk in the Cadaver Microbiome</b> <i>Gulnaz Javan, PhD*</i> ; <i>Sheree Finley, PhD</i> ; <i>Matteo Moretti, MD</i> ; <i>Silvia Visonà, PhD</i>
12:00 PM – 1:00 PM		<b>BREAK</b>

## Postmortem Imaging

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Moderator: *Jim Caruso*

Co-Moderator: *Candace Schoppe*

1:00 PM – 1:30 PM	<b>192</b>	<b>Forensic Imaging Curriculum at a State-Wide Medical Investigator's Office: The New Mexico Experience</b> <i>Jamie Elifritz, MD*</i> ; <i>Lauren Decker, MD</i> ; <i>Heather Jarrell, MD</i> ; <i>Natalie Adolphi, PhD</i> ; <i>Clarissa Krinsky, MD</i> ; <i>Jolee T. Suddock, DO</i> ; <i>Michael Harrell, MD</i> ; <i>Aidan Kerr, MD</i> ; <i>Brittany DePasquale, MD</i> ; <i>Harley Schainost, MD</i> ; <i>Kimberly Johnson, MD</i> ; <i>Natalie Taylor, MD</i> ; <i>Kethery Haber, MD</i>
1:30 PM – 1:45 PM	<b>193</b>	<b>Micro-Computed Radiological Analysis of Traumatic vs. Iatrogenic Rib Fractures</b> <i>Giorgia Franchetti, MD*</i> ; <i>Simone Protani, MD</i> ; <i>Ludovico Fava, MD</i> ; <i>Paolo Fais, MD, PhD</i> ; <i>Barbara Bonvicini, MD</i> ; <i>Chiara Girauda, MD, PhD</i> ; <i>Guido Viel, MD, PhD</i> ; <i>Giovanni Cecchetto, MD, PhD</i>
1:45 PM – 2:00 PM	<b>194</b>	<b>Playing With Fire: The Value and Pitfalls of Postmortem Computed Tomography (PMCT) for the Forensic Investigation of Burnt Bodies</b> <i>Antonio Oliva, MD, PhD</i> ; <i>Simone Grassi, MD</i> ; <i>Massimo Zedda, MD*</i> ; <i>Federica Maiolatesi, MD</i> ; <i>Valentina Masini, MSc</i> ; <i>Carlotta Amatuucci, MD</i> ; <i>Beatrice Defraia, MD</i> ; <i>Rossella Grifoni, MD</i> ; <i>Matteo Polacco, MD</i> ; <i>Martina Focardi, MD</i> ; <i>Laura Filograna, MD</i> ; <i>Vilma Pinchi, PhD</i>
2:00 PM – 2:15 PM	<b>195</b>	<b>WITHDRAWN</b>
2:15 PM – 2:30 PM	<b>196</b>	<b>A Pilot Study to Investigate If and How Postmortem Micro-Computed Tomography (Micro-CT) Can Be Used to Differentiate Stillbirths From Livebirths</b> <i>Francesco Lupariello, MD*</i> ; <i>Federica Mirri, MD</i> ; <i>Tullio Genova, PhD</i> ; <i>Federico Mussano, PhD</i> ; <i>Giovanni Botta, MD</i> ; <i>Giancarlo Di Vella, PhD</i>
2:30 PM – 3:00 PM	<b>197</b>	<b>Cold Eyes: Postmortem Iris Recognition Under Autopsy Procedures</b> <i>Jordan Reining, BS*</i> ; <i>Kathryn Seigfried-Spellar, PhD</i> ; <i>Stephen Elliott, PhD</i> ; <i>Kevin O'Connor, MS</i>
3:00 PM – 3:15 PM		<b>BREAK</b>

# PATHOLOGY/BIOLOGY

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## Pediatric Mortality and Molecular Studies

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Moderator: Stephanie Yagi

Co-Moderator: Dan Schultz

- 3:15 PM – 3:30 PM     **I98**     **Cardiac Genetic Background in Sudden Infant Death Syndrome (SIDS): Is It a Matter of Structure or Electrical Conduction?**  
*Francesca Cazzato, MD\**; *Simone Grassi, MD*; *Mònica Coll, PhD*; *Ramon Brugada, MD*; *Antonio Oliva, MD, PhD*
- 3:30 PM – 3:45 PM     **I99**     **A Case of Renal Failure Secondary to Rhabdomyolysis in an Infant**  
*Amanda Saunders, BS\**; *Sarah Avedschmidt, MD*
- 3:45 PM – 4:15 PM     **I100**     **An Infant Death Due to COVID-19 Infection With Recovery and Survival of a Twin Sibling: A Comparison of Autopsy and Histologic Findings in Pediatric and Adult Cases and a Review of the Surviving Twin's Course**  
*Jennifer Ross, MD\**; *Arezo Nasrazadani, MD*; *Michelle Ruda, MD*
- 4:15 PM – 4:45 PM     **I101**     **Postmortem Genetic Testing in Sudden Unexplained Death: A Public Health Laboratory Experience**  
*Charles Rohrer, MD\**; *Angela Lager, PhD*; *Erin Brooks, MD*; *Vanessa Horner, PhD*
- 4:45 PM – 5:00 PM     **I102**     **The Role of Myocardial Biomarkers in Sudden Cardiac Death: Forensic Utility**  
*Vincenzo Ritorto, MD\**; *Matteo Sacco, MD\**; *Fabrizio Cordasco, MD*; *Carmen Scalise, PhD, MD*; *Angelica Zibetti, MD*; *Martino Maesani, MD*; *Umberto Rosini, MD*; *Maria Manno, MD*; *Pietrantonio Ricci, PhD, MD*; *Isabella Aquila, PhD, MD\**

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## Poster Session

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- 11:30 AM – 1:00 PM     **I103**     **An Unusual Case of Self-Poisoning With Sodium Nitrite in an Asthmatic Patient**  
*Isabella Caristo, MD\**; *Brenda Briasco, MD*; *Ilaria Grasso, MD*; *Francesco Ventura, MD, PhD*
- 11:30 AM – 1:00 PM     **I104**     **Dying From an Antidote: A Case of Intravenous Lipid Emulsion Overdose in a Suspected Anesthetic Intoxication**  
*Ilaria Marcacci, MD\**; *Carla Occhipinti, MD*; *Federica Spina, MD*; *Andrea Scatena, MD*; *Marco Di Paolo, MD*
- 11:30 AM – 1:00 PM     **I105**     **Herbicide, Fungicide, Suicide: A Case of Glyphosate and Lime Sulfur (Calcium Polysulfide) Poisoning**  
*Neil Haycocks, MD, PhD\**; *Justin Lohmann, MD*; *Erik Christensen, MD*
- 11:30 AM – 1:00 PM     **I106**     **A Homicidal Poisoning Disguised by Drowning: How Stomach Content Analysis Helped to Solve the Mystery**  
*Eduardo Coutinho, MD\**; *Sara Adriazola, MD*; *Ricardo Mendonca, MD*; *João Pinheiro, MD*
- 11:30 AM – 1:00 PM     **I107**     **A Homicidal Poisoning With Amlodipine**  
*Federica Spina, MD\**; *Andrea Scatena, MD*; *Arianna Baronti, MD*; *Andrea Costantino, MD*; *Luigi Papi, MD*; *Silvio Chericoni, PhD*; *Fabio Stefanelli, PhD*
- 11:30 AM – 1:00 PM     **I108**     **WITHDRAWN**
- 11:30 AM – 1:00 PM     **I109**     **Metformin Fatal Intoxication: Suicide or Accident?**  
*Giacomo Visi, MD\**; *Federica Spina, MD*; *Eleonora Mezzetti, MD*; *Luigi Papi, MD*; *Fabio Stefanelli, PhD*; *Silvio Chericoni, PhD\**

# PATHOLOGY/BIOLOGY

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- 11:30 AM – 1:00 PM **I110** **Morphine Toxicity on Endothelial Differentiation of Vascular Mesenchymal Stromal Cells**  
*Maria Carla Mazzotti, MD; Guido Pelletti, MD\**; Arianna Giorgetti, MD\*; Paolo Fais, MD, PhD; Susi Pelotti, MD
- 11:30 AM – 1:00 PM **I111** **Sudden Death Due to Methamphetamine-Associated Pulmonary Hypertension: A Case Report**  
*Rasmey Thach, DO\**
- 11:30 AM – 1:00 PM **I112** **The Role of Carbon Dioxide in Death Related to Must Exhalations: Case Scenarios and Toxicological Results in Comparison**  
*Matteo Sacco, MD\**; Carmen Scalise, PhD, MD; Fabrizio Cordasco, MD; Saverio Gualtieri, MD\*; Maria Manno, MD; Martino Maesani, MD; Umberto Rosini, MD; Angelica Zibetti, MD; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD\*
- 11:30 AM – 1:00 PM **I113** **Unravelling the Mechanism of Death Through Urine Metabolome Analysis: An Infant Methadone Intoxication**  
*Alberto Chighine, MD\**; Matteo Nioi, MD; Giulio Ferino, PhD; Emanuela Locci, PhD; Ernesto d'Aloja, MD
- 11:30 AM – 1:00 PM **I114** **A Hepatic Hemangiosarcoma Presumed by Imaging as a Hemangioma: A Case Report and Literature Review**  
*Lance Truong, DO\**; Yigit Baykara, MD; Sean Hacking, MB, BCh; Ayesha Siddique, MD; Priya Banerjee, MD
- 11:30 AM – 1:00 PM **I115** **Postmortem Magnetic Resonance Imaging and Forensic Pathology: An Ever-Closer Relationship**  
*Giuseppe Bertozzi, MD\**; Francesco Pio Cafarelli, MD; Fabio Mariottini, MD; Michela Ferrara, MD\*; Valentina Milone, MD; Maria Antonella Bosco, MD; Francesco Carpano, MD; Raffaele La Russa, MD
- 11:30 AM – 1:00 PM **I116** **The Use of Hand-Held Scanners in Forensic Traumatology**  
*Jacopo Agnolucci, MD\**; Francesco Angiola, MD; Enrica Callegari, MD; Enrico Mazzobel, MD; Tommaso Livieri, MD; Paolo Fais, MD, PhD; Arianna Giorgetti, MD; Giovanni Cecchetto, MD, PhD; Guido Viel, MD, PhD
- 11:30 AM – 1:00 PM **I117** **Coronary Myointimal Hyperplasia: A Rare Cause of Sudden Young Death**  
*Mariagrazia Calvano, MD\**; Sara Sablone, MD; Federica Mele, MD; Mirko Leonardelli, MD; Enrica Macorano, MD; Stefano Duma, MD; Giovanni De Gabriele, MD; Francesco Introna, MD
- 11:30 AM – 1:00 PM **I118** **Elder Abuse in Europe's "Most Elderly City": A Ten-Year Report (2010 – 2019)**  
*Martina Drommi, MD\**; Francesco Ventura, MD, PhD; Andrea Molinelli, MD, PhD
- 11:30 AM – 1:00 PM **I119** **An Epidemiology Analysis of a Medical-Legal Investigation of Child and Adolescent Fatalities in Taiwan**  
*Chang Jui-An, MS\**; Chen Hsiao-Ting, BS; Tsai Theodore; Shaw Kai-Ping, PhD; Hsu Cho-Hsien, MD
- 11:30 AM – 1:00 PM **I120** **Extreme Shortness of the Umbilical Cord: A Case Report**  
*Ilenia Russo, MD\**; Andreana N.M. Maglitto, MD\*; Giuliana Pennisi, MD; Salvatore Iannuzzi, MD; Pietro Mazzeo, MD; Monica Salerno, MD, PhD
- 11:30 AM – 1:00 PM **I121** **Fatal Fistulas: A Case Report of Fatal Button Battery Ingestion in a 13-Month-Old With a Literature Review**  
*Romana Mayer, MD\**; Michelle DiMarco, MD; Rachel Geller, MD



# PATHOLOGY/BIOLOGY

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- 11:30 AM – 1:00 PM     **I122**     **Juvenile Suicide Trends: A Comparative Analysis of Factors Surrounding Georgia’s Child and Teen Deaths**  
*Cody Archer, BS\**; *Samantha Mattox, DO*; *Elizabeth Andrews, BS*; *John Carter, PhD, MPH*;  
*Natasha Grandhi, MD*
- 11:30 AM – 1:00 PM     **I123**     **Kennel Cough: A Case of a Lethal Bordetella Bronchiseptica Infection in an Infant**  
*Simmi Patel, MD\**; *Todd Luckasevic, DO*
- 11:30 AM – 1:00 PM     **I124**     **Neonatal Pulmonary Hemorrhage: A Hazardous Disease**  
*Paola Santoro, MD\**; *Fabio Del Duca, MD*; *Gianpietro Volonnino, MD*; *Ilaria Marcacci, MD*;  
*Alessandra De Matteis, MD*; *Aniello Maiese, MD*
- 11:30 AM – 1:00 PM     **I125**     **An Unexpected Pulmonary Embolism in an Adolescent: A Case Report and Literature Review**  
*Bradley Conlin, BS, MS\**; *Merete Lund, BS\**; *Nicole Masian, MD*; *Wendy Gunther, MD*

# PSYCHIATRY & BEHAVIORAL SCIENCE

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## Thursday

### Morning Session

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Moderator: *Carla Rodgers*

Co-Moderator: *Corina Freitas*

- 9:00 AM – 9:15 AM     **J1**     **WITHDRAWN**
- 9:15 AM – 9:30 AM     **J2**     **The Role of Graphology in the Study of Suicides and Homicides and in the Analysis of Self and Hetero-Aggressive Behaviors**  
*Palmo Tavernese\**; *Alessandro Santurro, MD, PhD\**; *Francesca Consalvo, MD\**; *Raffaele La Russa, MD*; *Matteo Sacco, MD\**; *Saverio Gualtieri, MD\**; *Valerio Aquila, MD\**; *Vincenzo Ritorto, MD\**; *Giulio Pulpito, MD\**; *Pietrantonio Ricci, PhD, MD*; *Isabella Aquila, PhD, MD\**
- 9:30 AM – 10:15 AM     **J3**     **The Aurora, Colorado, Movie Theater Shooting: The Significance for Forensic Mental Health Professionals**  
*Christopher Fields, MD\**; *Emily Gottfried, PhD\**; *E. Thomas Lewis, MD\**; *Diana Mullis, MD\**
- 10:15 AM – 10:45 AM     **BREAK**
- 10:45 AM – 11:15 AM     **J4**     **An Area of Conflict—Forensic Psychiatry in Germany**  
*Klaus Neudecker, MD\**
- 11:15 AM – 11:45 AM     **J5**     **The Pitfalls in the Assessment of Insanity Due to Dissociative Disorders**  
*Haseeb Haroon, MB, BS\**
- 11:45 AM – 1:00 PM     **BREAK**

### Afternoon Session

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Moderator: *Jessica Morel*

Co-Moderator: *Corina Freitas*

- 1:00 PM – 1:30 PM     **J6**     **Police Suicides in Turkey**  
*Nevzat Alkan, MD\**
- 1:30 PM – 1:45 PM     **J7**     **An Examination of a Police Officer's Quality of Life 23 Years After Surviving A Penetrating Gunshot Wound to the Head: A Case Report**  
*Gregory Mack, PhD\**
- 1:45 PM – 2:00 PM     **J8**     **Family Massacres Perpetrated by the Man of the House in Turkey**  
*Nevzat Alkan, MD\**
- 2:00 PM – 2:45 PM     **J9**     **A Persistent Deficit of Attention: The Inadequate Treatment of Attention Deficit Hyperactivity Disorder (ADHD) in Correctional Settings**  
*Sundeep Madireddi, MD\**
- 2:45 PM – 3:15 PM     **J10**     **The Eight Best Practices to Improve Forensic Psychological Assessment**  
*Tess Neal, PhD\**; *Kristy Martire, PhD\**; *Randy Otto, PhD*
- 3:15 PM – 3:45 PM     **BREAK**

# PSYCHIATRY & BEHAVIORAL SCIENCE

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Moderator: Karen Rosenbaum

Co-Moderator: Corina Freitas

- 3:45 PM – 4:00 PM     **J11**     **Cocaine Craving, Desperate Search for Intoxicants, Settling of Scores, and Murder**  
*Bernat-Noël Tiffon Nonis, PsyD\**
- 4:00 PM – 4:15 PM     **J12**     **A Cocaine-Induced Psychosis, Frustrated Suicide With a Firearm, and Subsequent Conviction for Attempted Homicide**  
*Bernat-Noël Tiffon Nonis, PsyD\**
- 4:15 PM – 4:45 PM     **J13**     **Forensic Psychiatric Implications of the Psychedelic Renaissance**  
*Brian Holoyda, MD, MPH\**
- 4:45 PM – 5:00 PM     **J14**     **Internet Gaming Disorder: A Sine Materia Intoxication That Can Make You Not Guilty**  
*Anita Sammarco, MD; Adriana Scuotto, MD\*; Valentina Battimiello, MD; Angela Silvestre, MD; Mariano Paternoster, MD; Maria Pieri, MD\*; Stefania Sivero, MD; Massimo Niola, MD*

## Friday

### Morning Session

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Moderator: David Annas

Co-Moderator: Corina Freitas

- 9:00 AM – 10:00 AM     **J15**     **Forensic Pathology for Forensic Psychiatrists**  
*Anita Rajkumar, MD\**
- 10:00 AM – 10:15 AM     **J16**     **A Case of Munchausen Syndrome By Proxy: The Role of Legal Medicine in Child Abuse Management in Emilia-Romagna**  
*Laura Camilla Gasparini, MD\*; Luca Diani, MD\*; Michele Carpinteri, MD; Giada Rovito, MS; Anna Giulia Lambertini, MD; Matteo Fabbri, PhD, MSc; Margherita Neri, MD, PhD; Rosa Maria Gaudio, MD*
- 10:15 AM – 10:45 AM     **BREAK**

Moderator: Klaus Neudecker, MD

Co-Moderator: Corina Freitas

- 10:45 AM – 11:00 AM     **J17**     **Homicide-Suicide in Older Couples**  
*Laura Renard, MD\*; Nathalie Jousset, MD*
- 11:00 AM – 11:30 AM     **J18**     **A Multidisciplinary Approach in a Sexual Homicide Scene**  
*Caterina Bosco, MD\*; Lucia Tattoli, PhD; Cristiano Barbieri, PhD; Ignazio Grattagliano, PhD; Francesca Capello, MD\*; Giancarlo Di Vella, PhD*
- 11:30 AM – 1:00 PM     **BREAK**

### Afternoon Session

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Moderator: Vivian Shnaidman

Co-Moderator: Corina Freitas

- 1:00 PM – 1:45 PM     **J19**     **Citation Analysis of Misinformation Regarding Parental Alienation Theory**  
*William Bernet, MD\*; Shenmeng Xu, PhD*
- 1:45 PM – 2:45 PM     **J20**     **Parental Alienation Relational Problems and the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)***  
*William Bernet, MD\**

# PSYCHIATRY & BEHAVIORAL SCIENCE

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Moderator: Vivian Shnaidman

Co-Moderator: Corina Freitas

- 2:45 PM – 3:00 PM    **J21**    **Temporary Psychopathy in Teen Accomplices**  
*Katherine Ramsland, PhD, MA\**
- 3:00 PM – 3:15 PM    **J22**    **The Pathological Impulsivity of a Homicidal Juvenile With Severe Attention Deficit Hyperactivity Disorder (ADHD) and Borderline Intellectual Function**  
*Bernat-Noël Tiffon Nonis, PsyD\**
- 3:15 PM – 4:00 PM    **J23**    **Insight: The Missing Link**  
*Vivian Shnaidman, MD\**

## Poster Session

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- 11:30 AM – 1:00 PM    **J24**     **$\Delta$ 8-Tetrahydrocannabinol ( $\Delta$ 8-THC) Is Equipotent to  $\Delta$ 9-Tetrahydrocannabinol ( $\Delta$ 9-THC) in a Mouse Model of Cannabis-Like Intoxication**  
*Mohammed Mustafa, MS\*; Kimberly Karin, MS; Justin Poklis, BS; Sara Dempsey, PhD; Dayong Lee, PhD; Michelle Peace, PhD; Aron Lichtman, PhD*
- 11:30 AM – 1:00 PM    **J25**    **Adolescent Nitrogen-Assisted Suicide Emulation: Coincidence or “Werther Effect”?**  
*Luigi Buongiorno, MD\*; Francesco Vinci, MD; Alessandra Stellacci, MD; Benedetta Pia De Luca, MD; Pierluigi Caricato, MD; Carlo Angeletti, MD; Fortunato Pititto, MD; Andrea Cabonara, MD; Vito Gabriele Sebastiani, MD; Maricla Marrone, MD*
- 11:30 AM – 1:00 PM    **J26**    **Advanced Magnetic Resonance of the Brain in Antisocial Behavior**  
*Eduardo Gonzalez-Toledo, MD, PhD\*; Jorge Pereyra, MD; Ines Aparici, MD; Daniel Silva, MD, PhD*
- 11:30 AM – 1:00 PM    **J27**    **Crime as an Outcome of Conflicts Between Subcultural and Symbolic Dimensions**  
*Cristiano Barbieri, PhD; Lucia Tattoli, PhD\*; Caterina Bosco, MD\*; Elisa Olivetta, MD\*; Ignazio Grattagliano, PhD; Giancarlo Di Vella, PhD*
- 11:30 AM – 1:00 PM    **J28**    **From Game to Death Is a Moment: The “Copycat Effect” in a Case of Atypical Murder**  
*Saverio Gualtieri, MD\*; Valerio Aquila, PsyD\*; Matteo Sacco, MD\*; Giuseppe Chiaravalloti; Fabrizio Cordasco, MD; Carmen Scalise, PhD, MD; Maria Manno, MD; Alessandro Tarallo, MD\*; Vincenzo Ritorto, MD\*; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD\**
- 11:30 AM – 1:00 PM    **J29**    **The Presence of Drugs in Firearm Suicides in Oakland County, Michigan**  
*Stavros Cardasis, BA\*; William Cardasis, MD*
- 11:30 AM – 1:00 PM    **J30**    **Psychosis in Cocaine Overdose: An Interesting Case**  
*Giovanni De Gabriele, MD\*; Lucia Aventaggiato, MD; Enrica Macorano, MD; Federica Mele, MD; Mirko Leonardelli, MD; Maria Grazia Calvano, MD; Stefano Duma, MD; Francesco Intronà, MD; Sara Sablone, MD*
- 11:30 AM – 1:00 PM    **J31**    **The Appropriateness of Insertion of Psychiatric Offending Patients in the Forensic Communities**  
*Donatella La Tegola, PhD; Henry Gerard Kennedy, MD; Fulvio Carabellese; Felice Francesco Carabellese, MD; Alan R. Felthous, MD\*; Alessandra Parente, MD\**

# QUESTIONED DOCUMENTS

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## Thursday

### Security Designs, Alterations, and Counterfeiting

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Moderator: Zain Bhaloo

Co-Moderator: Larry Olson

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|---------------------|-----------|--|
| 8:30 AM – 9:00 AM   | <b>K1</b> | <b>An Examination of Questioned Documents Using Digital Grid Overlays</b><br><i>Mark Goff, BA*</i> ; <i>McKenzie Weyh, BS</i>  |
| 9:00 AM – 10:00 AM  | <b>K2</b> | <b>The Security Design of the Next Generation U.S. Passport, U.S. Emergency Passport, and U.S. Bridge Visa</b><br><i>Traci Moran, MFS</i> ; <i>Joel Klotnick, MS*</i>                                  |
| 10:00 AM – 10:30 AM |           | <b>BREAK</b>   |
| 10:30 AM – 10:45 AM | <b>K3</b> | <b>The Characterization of Polymers of Counterfeit Identity Documents of European Union (UN) Member States</b><br><i>Jasna Galekovic*</i> ; <i>Veronika Marinovic, PhD</i> ; <i>Andrea Ledic, MS</i>   |
| 10:45 AM – 11:15 AM | <b>K4</b> | <b>WITHDRAWN</b>   |
| 11:15 AM – 11:45 AM | <b>K5</b> | <b>Fraud and the United States Postal Service (USPS): A Focus on Stamps</b><br><i>Lisa Tolli, MS</i> ; <i>Patricia Manzollilo, MSFS*</i> ; <i>Stephanie Kingsbury, MSFS</i> ; <i>Haley Elliott, MS</i> |
| 11:45 AM – 1:30 PM  |           | <b>BREAK</b>   |

### Forensic Document Examination Standards Development and Trending Topics

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Moderator: Ted Burkes

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|-------------------|-----------|--|
| 1:30 PM – 1:45 PM | <b>K6</b> | <b>An Update on Standards Development Activities Related to Forensic Document Examination</b><br><i>Kevin Kulbacki, MSFS*</i>                |
| 1:45 PM – 2:00 PM | <b>K7</b> | <b>The Forensic Document Examination (FDE) Steering Committee</b><br><i>Timothy Campbell, BSc*</i>   |
| 2:00 PM – 3:00 PM | <b>K8</b> | <b>The Forensic Document Examination (FDE) Forum</b><br><i>Carl McClary, MS*</i> ; <i>Karen Nobles, MFS</i> ; <i>Samiah Ibrahim, BA, BSc</i> |

### Poster Session

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| 11:30 AM – 1:00 PM | <b>K9</b>  | <b>Black-Box Metamodeling Between Feature Combinations for Paired Comparisons of Documents of Forensic Handwriting Data</b><br><i>Cami Fuglsby, MS*</i> ; <i>Christopher Saunders, PhD</i> ; <i>Danica Ommen, PhD</i> ; <i>JoAnn Buscaglia, PhD</i><br>(FSF Emerging Forensic Scientist Award Poster Presentation) |
| 11:30 AM – 1:00 PM | <b>K10</b> | <b>Fontastique! Framework for the Comparison and Evaluation of Currently Available Typeface Identification Applications for the Modern Forensic Document Examiner</b><br><i>Zain Bhaloo, MSc</i> ; <i>BScH*</i>  |

# QUESTIONED DOCUMENTS

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11:30 AM – 1:00 PM	<b>K11</b>	<b>Handwriting Variability in Adult Writers With Attention Deficit Hyperactivity Disorder (ADHD) Pre- and Post-Medication: A Pilot Study</b> <i>Christopher Burke, MS*; Heidi Harralson, MA; Larry Miller, PhD</i>
11:30 AM – 1:00 PM	<b>K12</b>	<b>Quantifying Bayes Factors for Forensic Handwriting Evidence</b> <i>Anyesha Ray, BS*; Danica Ommen, PhD</i>
11:30 AM – 1:00 PM	<b>K13</b>	<b>Quantifying Writer Variance Through Rainbow Triangle Graph Decomposition of the Common Word “the”</b> <i>Alexandra Arabio, BS*; Alicia Carriquiry, PhD; Danica Ommen, PhD</i>
11:30 AM – 1:00 PM	<b>K14</b>	<b>Training, Education, and Certification of Forensic Document Examiners in the United States</b> <i>Lauren Turnacioglu, BA*; Lyndsie Ferrara, PhD; Gary Licht, MS; Khody Detwiler, BS (FSF Emerging Forensic Scientist Award Poster Presentation)</i>
11:30 AM – 1:00 PM	<b>K15</b>	<b>Twin Convolutional Neural Networks to Classify Writers Using Handwriting Data</b> <i>Pilhyun Lim, MS*; Danica Ommen, PhD</i>

## Friday

### Handwriting, Algorithms, and Ink Analysis and Evaluation

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Moderator: Dianne Flores

8:30 AM – 8:45 AM	<b>K16</b>	<b>A Comparison of FLASH ID and Handwriter: Two Handwriting Analysis Programs</b> <i>Stephanie Reinders, PhD*; Danica Ommen, PhD; Alicia Carriquiry, PhD</i>
8:45 AM – 9:00 AM	<b>K17</b>	<b>Determining Authorship Among the Handwriting of Fifth Graders: A Case Study</b> <i>Sandra Raudabaugh, BS*</i>
9:00 AM – 9:15 AM	<b>K18</b>	<b>Handwriting Comparison Examinations With Limited Known Writing Samples</b> <i>Donald Moryan, BS*</i>
9:15 AM – 9:30 AM	<b>K19</b>	<b>Signature Verification Algorithms: What They Are, How They Are Used, and How to Evaluate Them</b> <i>Kevin Kulbacki, MSFS*; Nikolaos Kalantzis, MSc; Batya Fuchs, MSc</i>
9:30 AM – 10:00 AM		<b>BREAK</b>
10:00 AM – 10:15 AM	<b>K20</b>	<b>Signature Verification Algorithms: Potential Forensic Uses and Bias Considerations</b> <i>Kevin Kulbacki, MSFS*; Nikolaos Kalantzis, MSc; Batya Fuchs, MSc</i>
10:15 AM – 10:45 AM	<b>K21</b>	<b>The Robert Durst Case: Revisiting Myths of Handprinting Examinations</b> <i>Linton Mohammed, PhD*; Lloyd Cunningham</i>
10:45 AM – 11:00 AM	<b>K22</b>	<b>A Failure Analysis of Ink Samples Using Multiple Modes of Pyrolysis-Gas Chromatography/Mass Spectrometry (PY-GC/MS)</b> <i>Athena Nguyen, BS*</i>
11:00 AM – 11:15 AM	<b>K23</b>	<b>A Spectroscopic Evaluation of Two Black Pen Inks Using Video Spectral Comparator</b> <i>Rafal Turek, MS*</i>

# TOXICOLOGY

## Wednesday

### Poster Session

7:30 PM – 9:00 PM	L1	<b>WITHDRAWN</b>
7:30 PM – 9:00 PM	L2	<b>The Quantitation of Five Benzodiazepines and Zolpidem in Whole Blood Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</b> <i>Ivana Antunovic, MSc*; Sandra Mudrić, MSc; Tomislav Houra, MSc; Elizabeta Stojaković, MSc; Maja Jelena Čop, PhD</i>
7:30 PM – 9:00 PM	L3	<b>The Quantitation of Fentanyl, P-Fluorofentanyl, and Xylazine in Postmortem Blood by Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</b> <i>Michael Truver, PhD*; Sara Brogan, BS; Amy Kinsey, MS; Jennifer Hoyer, MS; Chris Chronister, PhD; Bruce Goldberger, PhD</i>
7:30 PM – 9:00 PM	L4	<b>A New Approach for Identifying the Postmortem Formation of Ethanol: The Development and Validation of a Salt-Assisted Headspace/Gas Chromatograph/Flame Ionization Detector (HS/GC/FID) Method for the Determination of Ethanol in Vitreous Humor</b> <i>Giacomo Musile, PhD*; Nicola Pigaiani, MD; Emma Pasetto, BSc; Marco Ballotari, MSc; Federica Bortolotti, PhD; Franco Tagliaro, MD</i>
7:30 PM – 9:00 PM	L5	<b>Comparing Density Functional Theory (DFT) Calculations and Surface-Enhanced Raman Spectroscopy (SERS) Results to Differentiate Structurally Similar Fentanyl Analogs</b> <i>Sevde Dogruer Erkok, PhD*; Emily Hernandez, BS*; Bruce McCord, PhD</i>
7:30 PM – 9:00 PM	L6	<b>The Simultaneous Determination of 24 Designer Benzodiazepines in Hair Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</b> <i>Jongsook Rhee, PhD*; Byungsook Cho, MS; Hyewon Baik, MS; Yujin Park, PhD; Ilchung Shin, PhD; Jihyun Kim, PhD; Sanggil Choe, PhD; Suncheon Kim, PhD; Eunmi Kim, PhD</i>
7:30 PM – 9:00 PM	L7	<b>Evaluating Cannabinoid Stability in Different Conditions and Validating THC-O and THC-P for Oral Fluid Analysis</b> <i>Cody Passeur, MSFS*; Curt Harper, PhD; Elizabeth Gardner, BS, PhD</i>
7:30 PM – 9:00 PM	L8	<b>Substance-Related Pediatric Deaths Examined at the West Tennessee Regional Forensic Center: An Analysis of the Past 16 Years</b> <i>Ibrahim Ortanca, MD*; Danielle Harrell, DO</i>
7:30 PM – 9:00 PM	L9	<b>Is a Subdural a Time Capsule?</b> <i>Brianna Smyth, BS*; Dina Swanson, MS; Julia Pearson, PhD</i>
7:30 PM – 9:00 PM	L10	<b>The Detection of Ethanol Consumption Markers and Drugs in Urine Samples From Inmates of Two German Prisons</b> <i>Vanessa Thoma, MD*; Anette Franz, MD; Laura Huppertz, BS; Volker Auwärter, MD; Annette Thierauf-Emberger, MD</i>
7:30 PM – 9:00 PM	L11	<b>Quantitative and Qualitative Analysis of Fentanyl and Its Analogs in Urine Using Disposable Pipette Extraction</b> <i>Dominic Minasi-Tapia, MS*; Ihouma Igwilo, MBBS, MSFS; G. Brent Dawson, PhD; Tara Arends, MS; Michael Baldwin, BA</i>

# TOXICOLOGY

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7:30 PM – 9:00 PM	<b>L12</b>	<b>Machine Learning Approaches to Make Data Driven Decisions in Forensic Science Application by Using Fourier Transform Infrared (FTIR) Spectroscopy</b> <i>Bilkis Mitu, PhD*</i> ; <i>Lenka Halamkova, PhD</i>
7:30 PM – 9:00 PM	<b>L13</b>	<b>The Analysis of Depressants and Psychedelic Drugs From Vitreous Humor Using Liquid-Liquid Extraction (LLE) and High-Performance Thin-Layer Chromatography (HTPLC) Plates</b> <i>Neha Afaria, PhD*</i> ; <i>Ashok Kumar Jaiswal, PhD</i>
7:30 PM – 9:00 PM	<b>L14</b>	<b>Comparing the Performance of Liquid Chromatography/Triple Quadrupole/Mass Spectrometry (LC/QqQ/MS) vs. Liquid Chromatography/Quadrupole Time-Of-Flight/Mass Spectrometry (LC/QTOF/MS) for Targeted Analysis of NPS With a Test Mixture of 40 New Psychoactive</b> <i>Rebecca Smith, MS*</i> ; <i>Anthony DeCaprio, PhD</i> ; <i>Anamary Tarifa, PhD</i>
7:30 PM – 9:00 PM	<b>L15</b>	<b>Evaluating Cannabidiol (CBD) for Potential Interference in Six Commercial Homogeneous Cannabinoid Urine Screening Kits</b> <i>Ashley Pokhai, BA*</i> ; <i>Justin Poklis, BS</i> ; <i>Grace Williams, PhD</i> ; <i>Carl Wolf, PhD, MS</i>
7:30 PM – 9:00 PM	<b>L16</b>	<b>The Revival of Opioids Among Young People: An Overview on Toxicological, Epidemiological, and Social Aspects</b> <i>Simona Nicoli, MD</i> ; <i>Cristina Caterino, MD</i> ; <i>Marcello Benevento, MD</i> ; <i>Giampiero Bottari, MD</i> ; <i>Francesco Clemente, MD</i> ; <i>Francesco Carravetta, MD</i> ; <i>Biagio Solarino, PhD*</i>
7:30 PM – 9:00 PM	<b>L17</b>	<b>A Combined Death by Food Aspiration and Acute Citalopram Intoxication</b> <i>Pietro Zuccarello, PhD*</i> ; <i>Giulia Carnazza, Msc</i> ; <i>Francesco Sessa, MS, PhD</i> ; <i>Monica Salerno, MD, PhD</i> ; <i>Cristoforo Pomara, MD</i> ; <i>Nunziata Barbera, MD</i>
7:30 PM – 9:00 PM	<b>L18</b>	<b>Donepezil Concentrations in Postmortem Toxicology</b> <i>Jolene Bierly, MSFS*</i>
7:30 PM – 9:00 PM	<b>L19</b>	<b>The Development of an Extraction Method for the Analysis of Synthetic Opioids in Bone Samples Using the Bead Ruptor</b> <i>Kala Babb, BS*</i> ; <i>David Cohen, MD</i> ; <i>Justin Poklis, BS</i> ; <i>Emanuele Alves, PhD</i>
7:30 PM – 9:00 PM	<b>L20</b>	<b>The Chemical Characterization of Cannabidiol-Based Products Using Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR), Gas Chromatography/Mass Spectrometry (GC/MS) and Gas Chromatography/Tandem Mass Spectrometry (GC/MS/MS)</b> <i>Eduardo De Campos, PhD*</i> ; <i>Dehlia Lang, BS*</i>
7:30 PM – 9:00 PM	<b>L21</b>	<b>A Report of Isolated Para-Fluorofentanyl Deaths in Allegheny County, Pennsylvania</b> <i>Courtney Healy, DO*</i> ; <i>Todd Luckasevic, DO</i> ; <i>Jennifer Janssen, BS, MS</i> ; <i>Ariel Goldschmidt, MD</i> ; <i>Karl Williams, MD, NPH</i>
7:30 PM – 9:00 PM	<b>L22</b>	<b>Color Me Stable: Choosing an Adequate Blood Collection Tube for Venous Blood Toxicological Analyses</b> <i>Gabrielle Daigneault</i> ; <i>Anabelle Carbonneau, BSc</i> ; <i>Elizabeth Charron, BSc</i> ; <i>Genevieve Dube, BSc</i> ; <i>Stephanie Savard</i> ; <i>Brigitte Desharnais, PhD</i> ; <i>Edith Viel, BSc</i> ; <i>Alexandra Doyon, MSc*</i> ; <i>Souryvanh Nirasay, PhD</i> ; <i>Pascal Mireault, MSc</i>
7:30 PM – 9:00 PM	<b>L23</b>	<b>Solid Phase Extraction of Novel Synthetic 2-Benzylbenzimidazole Opioid Compounds: "Nitazenes"</b> <i>Emily Eng, MSFS*</i> ; <i>Stephanie Reichardt, MSFS*</i>



# TOXICOLOGY

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- 7:30 PM – 9:00 PM    **L24**    **The Quantitative Analysis of Cadmium in Blood Using Flame Atomic Absorption Spectrometry (FAAS)**  
*Jatin Kumar Drall\**; Ashok Kumar Jaiswal, PhD; Ajay Kumar Kataria, MTech
- 7:30 PM – 9:00 PM    **L25**    **The Evaluation of Spontaneous Overtime Methaemoglobin Production in Postmortem Blood Samples From Real Cases in Critical Storage Conditions for an Application in Cases of Suspected Nitrate Poisoning**  
*Sara Gariglio, BS\**; Maria Chiara David, PhD; Alessandro Mattia, MS; Matteo Scopetti, MD; Alessandro Santurro, MD, PhD; Stefano D’Errico, MD, PhD
- 7:30 PM – 9:00 PM    **L26**    **A New Assay for Phosphatidylethanol (PEth) in Blood Via Gas Chromatography/Electron Impact/Mass Spectrometry (GC/EI/MS)**  
*James DeFrancesco, PhD\**
- 7:30 PM – 9:00 PM    **L27**    **Death Following the Accidental Ingestion of E-liquid**  
*Mihaela Georgieva, MD\**; Martin Angelov, MD; Kamen Peev, MD; Iliana Brainova, MD, PhD; Verzhiniya Stefanova, MD; Alexandar Alexandrov, MD, PhD; Metodi Goshev, MD, PhD; Biliana Mileva, MD; Lorenzo Gitto, MD; Vesela Ivanova, MD, PhD; Tihomir Dikov, MD; Vasil Atanasov, MD, PhD
- 7:30 PM – 9:00 PM    **L28**    **The Evaluation of the Cross-Reactivity of Cannabidiol (CBD), Delta-Tetrahydrocannabinols (Delta-THCs), Olivetol, and Metabolites in Whole Blood Using a THC Enzyme-Linked Immuno-Sorbent Assay (ELISA) Kit**  
*Carl E. Wolf, PhD\**; Jade Smith, BS; Grace Williams, PhD; Emanuele Alves, PhD; Justin Poklis, BS
- 7:30 PM – 9:00 PM    **L29**    **A Review of Illicit Substances Detected in Homicidal Deaths in Memphis, Tennessee, Over a Three-Year Period**  
*Latifah Ahmad, BS\**; Danielle Harrell, DO
- 7:30 PM – 9:00 PM    **L30**    **WITHDRAWN**
- 7:30 PM – 9:00 PM    **L31**    **The Development of New Solvent Systems for the Analysis of Clonazepam in Blood Using High-Performance Thin-Layer Chromatography (HPTLC) Plates**  
*Naagar Sunil, MD\**; Rohit Kanojia, PhDc
- 7:30 PM – 9:00 PM    **L32**    **The Analysis of Vitreous Humor: Enhanced Toxicological Testing Potential in Postmortem Examination**  
*Jennifer Vosters, BS\**; Noelle Fukuda, BS\*; Tiffany Hangse, BA\*; Rubie Villela, BS; Prentiss Jones, Jr., PhD
- 7:30 PM – 9:00 PM    **L33**    **The Generation of Methamphetamine From Amphetamine by N-Methyltransferase in Human Cytosol: Implications for Therapeutic Amphetamine Patients**  
*Abby Veaser, MSFS\**; Robert Powers, PhD
- 7:30 PM – 9:00 PM    **L34**    **Molecular Dynamics Simulations of Novel Synthetic Opiates Binding to the Opioid Receptors (ORs)**  
*Uzoma Okafor, PhD\**
- 7:30 PM – 9:00 PM    **L35**    **The Detection of  $\Delta^9$ -Tetrahydrocannabinol (THC) in Oral Fluid Using the Fast Blue BB (FBBB) Test**  
*Roberta Gorziza, PhD\**; Nicole Valdes, MS; Marilyn Tinoco, MS; Jose Almirall, PhD

# TOXICOLOGY

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- 7:30 PM – 9:00 PM     **L36**     **The Elution and Recovery of Cannabinoids From an Impaction Filter Device**  
*Jennifer Berry, PhD\**; *Kavita Jeerage, PhD*; *Mary Gregg, PhD*; *Cheryle Beuning, PhD*
- 7:30 PM – 9:00 PM     **L37**     **The Characterization of Spice Products: Barely Legal, Voodoo Child, Brainstorm and Their Effects on Human A549 Lung Cells**  
*Oluseyi Vanderpuye, PhD\**; *Miron Gilbert, PhD*
- 7:30 PM – 9:00 PM     **L38**     **A Sip of Blue Wine: Fatal Intoxication by Dimethoate**  
*Andrea Costantino, MD\**; *Giacomo Visi, MD*; *Julia Lazzari, MD*; *Fabio Stefanelli, PhD*; *Silvio Chericoni, PhD*; *Marco Di Paolo, MD*

## Thursday

### Annual Lectureship in Toxicology

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8:15 AM – 8:30 AM     **Welcome and Introductions**

8:30 AM – 9:30 AM     **Annual Lectureship in Toxicology**  
*Karen McDonald, MS*  
*Lead for Toronto's Drug Checking Service*  
*Centre on Drug Policy and Evaluation*

*Moderator: Diane Boland*

*Co-Moderator: Dayong Lee*

9:30 AM – 10:00 AM     **L39**     **Standards Development Activities in Forensic Toxicology**  
*Marc LeBeau, PhD\**

10:00 AM – 10:15 AM     **L40**     **2021 National Forensic Laboratory Information System (NFLIS) Toxicology Laboratory Survey Findings**  
*DeMia Pressley, MS\**; *BeLinda Weimer, MS*; *David Heller, BS*; *Jeffrey Ancheta, BS*; *Neelima Kunta, BS*; *Kelly Keyes, BS*; *Megan Grabenauer, PhD*; *Katherine Bollinger, MS*; *Hope Smiley-McDonald, PhD*; *Jeri Roper-Miller, PhD*

10:15 AM – 10:30 AM     **BREAK**

### Novel Psychoactive Substances

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*Moderator: Alex Krotulski*

*Co-Moderator: Donna Papsun*

10:30 AM – 10:45 AM     **L41**     **The Continually Expanding World of Designer Benzodiazepines**  
*Donna Papsun, MS\**; *Alex Krotulski, PhD*; *Barry Logan, PhD*

10:45 AM – 11:00 AM     **L42**     **Mixed Intoxications Involving the Novel Synthetic Opioids Methoxyacetylfentanyl and U-47700: A Study of Three Cases**  
*Arianna Giorgetti, MD\**; *Giorgia Franchetti, MD*; *Rebecca Pircher-Berchtold, MD*; *Markus Große Perdekamp, MD*; *Stefan Pollak, MD*; *Susi Pelotti, MD*; *Volker Auwärter, MD*

11:00 AM – 11:15 AM     **L43**     **Phase I Metabolism of New Psychoactive Substances Via Alternative In Vitro Methods**  
*Leonardo Maya, MS\**; *Anthony DeCaprio, PhD*

# TOXICOLOGY

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- 11:15 AM – 11:30 AM    **L44**    **N-Pyrrolidino Etonitazene: A Newly Emerging Nitazene Compound in the Synthetic Opioid Landscape**  
*Amanda Hersh, MD\**; *Meredith Frank, MD*; *James Caruso, MD*; *Ian Puffenberger, MD*;  
*Sterling McLaren, MD*; *Daniel Anderson, MS*
- 11:30 AM – 11:45 AM    **L45**    **Temperature and pH-Dependent Stability: Identifying Fentanyl Degradation Pathways**  
*Madison Schackmuth, BS\**; *Sarah Kerrigan, PhD*
- 11:45 AM – 1:00 PM                    **BREAK**

## Multidisciplinary Session: Pathology/Biology and Toxicology

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Moderator: *Tracy Halvorson*

Co-Moderator: *Kristin Kahl*

- 1:00 PM – 1:15 PM    **L46**    **An Unusual Case of Misrepresented Cocaine Powder That Resulted in Fatal and Non-Fatal Intoxications Involving the Novel Synthetic Opioid Etodesnitazene**  
*Alex Krotulski, PhD\**; *Stephany Fiore, MD*; *Daniel Anderson, MS*; *Sara Walton, MS*;  
*Brianna Peterson, PhD*; *Donna Papsun, MS*; *Joshua DeBord, PhD*; *Barry Logan, PhD*
- 1:15 PM – 1:30 PM    **L47**    **I Believe I Can Fly: Hallucinogenic/Psychedelic Drugs Found in Fall-From-Height Cases in Miami-Dade County, Florida**  
*Marissa Finkelstein, MS\**; *George Hime, MS*; *Diane Boland, PhD*
- 1:30 PM – 1:45 PM    **L48**    **Synthetic Cannabinoids Adulterated With Brodifacoum—Part II: The Florida Experience**  
*Robert Middleberg, PhD\**; *Justin Arnold, DO, MPH*; *Alexandra Funk, PharmD*
- 1:45 PM – 2:00 PM    **L49**    **Adverse Effects of Veterinary Pharmaceuticals as Toxic Adulterating Agents in Illicit Drug Deaths**  
*Barry Logan, PhD\**; *Alex Krotulski, PhD*; *Amanda Mohr, MS*; *Thom Browne, Jr., MA*
- 2:00 PM – 2:15 PM    **L50**    **A Compilation of Postmortem Vitreous Fluid Data for Pediatric Cases**  
*Breanne Vance, BA\**; *Kari Midthun, PhD*; *Jennifer Swatek, MS*; *Fabio Oldoni, PhD*
- 2:15 PM – 2:30 PM    **L51**    **Postmortem Formation of Ethanol: Is N-Propanol a Reliable Marker? A Proof-of-Concept Study Using a Real-Environment Experimental Set-Up**  
*Nicola Pigaiani, MD\**; *Giacomo Musile, PhD*; *Francesco Ausania, MD, PhD*; *Daniel Dye, MD*;  
*Gregory Davis, MD*; *Franco Tagliaro, MD*; *Antonio Oliva, MD, PhD*; *Federica Bortolotti, PhD*
- 2:30 PM – 2:45 PM    **L52**    **A Quantitative Analysis of Fentanyl and Major Metabolites From Empty Puparia and Adult Blow Flies Via QuEChERS Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis**  
*Joseph Cox, PhD\**; *Katherine Davis*; *Kylea Morris, BS*; *Rachel Mohr, PhD*; *Joseph DeTondo, DO*;  
*Luis Arroyo, PhD*
- 2:45 PM – 3:00 PM    **L53**    **Toxicology Laboratory Findings From the 2018 Census of Medical Examiner and Coroner Offices**  
*Jeri Roper-Miller, PhD\**; *Hope Smiley-McDonald, PhD*; *Katherine Bollinger, MS*
- 3:00 PM – 3:15 PM                    **BREAK**

# TOXICOLOGY

Moderator: Marissa Finkelstein

Co-Moderator: Susan Ely

- 3:15 PM – 3:30 PM **I71** **An Alleged Patricide by Americium-241 Poisoning**  
*Wendy Gunther, MD\**
- 3:30 PM – 3:45 PM **I72** **Fatal Butane Acute Intoxication in Custody—Pitfalls and Recommendations: An Analysis of Six Cases**  
*Michela Peruch, BS\*; Luigi Cipolloni, MD; Stefania De Simone, MD; Maria Chiara David, PhD; Monica Concato, BS; Martina Zanon, BS; Riccardo Addobbati, BS*
- 3:45 PM – 4:00 PM **I73** **Death as a Consequence of Cardiorespiratory Arrest Caused by a Cocaine-Induced Generalized Seizure: Toxicological Data in a Case Report**  
*Isabella Mercurio, MD\*; Laura Panata, MD; Michela Ferrara, MD; Mauro Bacci, MD; Cristina Gambelunghe, MD; Massimo Lancia, MD*
- 4:00 PM – 4:15 PM **I74** **Sodium Nitrite Poisoning: A Case Series of an Emerging Suicide Mechanism**  
*Ethan Blocher-Smith, MS, DO\*; Elizabeth Douglas, MD; Joseph Prahlow, MD*
- 4:15 PM – 4:30 PM **I75** **The Use of Over-the-Counter Tests to Detect Pregnancy in Postmortem Urine and Vitreous Fluid**  
*Marianne Hamel, MD, PhD\*; Andrew Falzon, DM*

## Friday

### Drugs and Driving Special Session

Moderator: Jennifer Limoges

Co-Moderator: Tim Rohrig

- 8:30 AM – 8:45 AM **L54** **Acute Psychotic Episodes in Impaired Driving Cases Involving Tetrahydrocannabinols ( $\Delta 8$  and  $\Delta 9$ )**  
*Nicholas Tiscione, MS\**
- 8:45 AM – 9:00 AM **L55** **Drug Testing and Traffic Safety: What You Need to Know**  
*Amy Berning, MA, PhDc\*; Ryan Smith, PhD; Kathryn Wochinger; Morgan Drexler, MPH*
- 9:00 AM – 9:15 AM **L56** **1,1-Difluoroethane in Driving Under the Influence (DUI) Cases—Intoximeter® DMT Dual Sensor and Draeger Alcotest 7110 Aiding Officers in Inhalant Cases**  
*Jasmine Maxwell, MSFS\*; Greg Turner, PhD; Curt Harper, PhD*
- 9:15 AM – 9:30 AM **L57** **A Standardized Method for Analyzing Toxicology Data in Drugged Driving Research**  
*Ryan Smith, PhD\*; Mary Pat McKay, MD, MPH; Jana Price, PhD*
- 9:30 AM – 9:45 AM **L58** **Impaired Driving Drug Trends and Stop Limit Testing Evaluation**  
*Grace Cieri, BS\*; Amanda Mohr, MS; Melissa Fogarty, MSFS; Barry Logan, PhD*
- 9:45 AM – 10:00 AM **L59**  **$\alpha$ -Pyrrolidinoisohexanophenone ( $\alpha$ -PiHP) in Driving Under the Influence (DUI) Cases**  
*Kristin Kahl, MS\*; Lisa Reidy, PhD*
- 10:00 AM – 10:15 AM **L60** **Blood Alcohol Concentration and Road Accidents—A Significant Underestimation Due to Delay in Blood Sampling: A Four-Year Retrospective Study in Rome**  
*Giovanni Aulino, MD\*; Nadia De Giovanni, PhD; Gianluca Lentini, MD; Giuseppe Vetrugno, MD; Sabina Strano-Rossi, MD; Marcello Covino, MD; Francesca Cittadini, MD*
- 10:15 AM – 10:30 AM **BREAK**

# TOXICOLOGY

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## General Toxicology

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Moderator: *Jasmine Maxwell*

Co-Moderator: *Michael Wagner*

- 10:30 AM – 10:45 AM    **L61**    **Oxycodone Pharmacokinetics in Whole Blood After a Single Dose of Immediate and Controlled Release Formulations**  
*Gerd Jakobsson, MSc\**; *Michael Truver, PhD*; *Maria Cherma, PhD*; *Madeleine Swortwood, PhD*; *Henrik Green, PhD*; *Robert Kronstrand, PhD*
- 10:45 AM – 11:00 AM    **L62**    **The Extraction and Quantification of Toxic Heavy Metals From Calliphoridae Larvae**  
*Daniela Bermeo Grajales\**; *Stephanie Urias*; *Cathleen Doherty, PhD*; *Denise Gemmellaro, PhD\**
- 11:00 AM – 11:15 AM    **L63**    **A Cost Benefit Analysis of High Resolution Mass Spectrometry (HRMS) -Based Drug Screening in Forensic Toxicology**  
*Jessica Ayala, PhD\**; *Sarah Kerrigan, PhD*
- 11:15 AM – 11:30 AM    **L64**    **Assessing Relative Levels of Ionic and Non-Ionic Binding of Drugs and Metabolites in Authentic Hair Reference Material (HRM)**  
*Brianna Spear, MS\**; *Anthony DeCaprio, PhD*
- 11:30 AM – 11:45 AM    **L65**    **Toxicological Surveillance of Clinical Patients Presenting to the Emergency Department After Suspected Opioid Overdoses: Geographical Trends and Impacts on Forensic Toxicology** *Sara Walton, MS\**; *Alex Krotulski, PhD*; *Alex Manini, MD, MS*; *Lindsey Domanoski, BS*; *Alyssa Reyes, BS*; *Barry Logan, PhD*  
(FSF Emerging Forensic Scientist Award Oral Presentation)
- 11:45 AM – 1:00 PM    **BREAK**

## Special Session—Pediatric Toxicology

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Moderator: *Robert Middleberg*

Co-Moderator: *Nikolas Lemos*

- 1:00 PM – 5:00 PM    **L66**    **The 22nd Annual Postmortem Pediatric Forensic Toxicology Session**  
*Robbert A. Middleberg, PhD\**; *Nikolas Lemos, PhD\**; *Andrew Baker, MD\**; *Christopher Milroy, MD, LLB\**; *Brianna Peterson, PhD\**; *Kari Midthun, PhD\**; *Jennifer Swatek, MS\**

# LAST WORD SOCIETY

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## Thursday

Moderator: *Kenneth E. Melson, JD*

Co-Moderator: *Carla M. Noziglia, MS*

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|--------------------|------------|---|
| 8:00 PM – 8:25 PM  | <b>LW1</b> | <b>The Death Ray: A Historical and Forensic Investigation of an Italian Mystery</b><br><i>Matteo Borrini, PhD*</i> ; <i>Marco Morocutti, PhD</i> ; <i>Luigi Simeoni</i> ; <i>Lorenzo Paletti, MSc</i>                           |
| 8:25 PM – 8:50 PM  | <b>LW2</b> | <b>The Case of the Count's Cranium: (Mis)identification of Revolutionary War Colonel Carl Emil Ulrich von Donop (1732-1777)</b><br><i>Thomas A. Crist, PhD*</i> ; <i>Richard F. Veit, PhD</i> ; <i>Hillary A. DelPrete, PhD</i> |
| 8:50 PM – 9:15 PM  | <b>LW3</b> | <b>The Somerton Man—Australia's Coldest Case Solved!</b><br><i>Colleen M. Fitzpatrick, PhD*</i> ; <i>Derek Abbott, PhD</i>  |
| 9:15 PM – 9:35 PM  | <b>LW4</b> | <b>The Identification of the 1961 Bibb County Teenage Hitchhiker Using Forensic Genetic Genealogy (FGG)</b><br><i>Colleen M. Fitzpatrick, PhD*</i> ; <i>Misty Gillis</i>  |
| 9:35 PM – 10:00 PM | <b>LW5</b> | <b>Who Murdered Charles Lindbergh, Jr., and Why?</b><br><i>Lise A. Pearlman, JD*</i> ; <i>Peter Speth, MD</i> , <i>Jamie E. Benvenuto, BA</i>   |

# YFSF POSTER SESSION

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## Friday

### Anthropology

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- 11:30 AM – 1:00 PM    **Y1**    **A Test of a Newly Revised Age-at-Death Method for the Auricular Surface of the Ilium**  
*Frankey Leggio\**; *Krista Bennett, MA*
- 11:30 AM – 1:00 PM    **Y2**    **Growth of the Juvenile Talus: A Pilot Study in Age-at-Death Estimation**  
*Rebecca Reid, MSc\**

### Criminalistics

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- 11:30 AM – 1:00 PM    **Y3**    **Accuracy of DNA Phenotyping Using Next Generation Sequencing**  
*Paige Aymar, BA\**; *Lisa Ludvico, PhD*; *Pamela Marshall, PhD*
- 11:30 AM – 1:00 PM    **Y4**    **Analysis Methods of Ephedra and Related Compounds in Web of Science (WOS) Between 1980-2022: A Systematic Review and Meta-Analysis**  
*Nurdan Sandikci, MSc\**; *Sevil Atasoy, PhD*
- 11:30 AM – 1:00 PM    **Y5**    **Analysis of the Inorganic Components of Eyeshadows by XRD and SEM-EDS**  
*Alexandra Mahler\**; *Anna Duggar, PhD*
- 11:30 AM – 1:00 PM    **Y6**    **Biometrics From Human Hair Using Gas Chromatography-Isotope Ratio Mass Spectrometry of Ethyl Chloroformate Derivatives of Amino Acids**  
*Erica Maney, MS\**; *Glen Jackson, PhD*
- 11:30 AM – 1:00 PM    **Y7**    **Detection of Ignitable Liquid Residues Using Crime-lite® AUTO**  
*Kaylee Morton, BS\**; *Kimberly Kunkler, PhD*; *Lauren Richards-Waugh, PhD*; *Mathew Winters, AS*
- 11:30 AM – 1:00 PM    **Y8**    **The Use of Portable Capillary Liquid Chromatography With Dual Silica Hydride Stationary Phases and Dual Ultraviolet Wavelength Detection for the Analysis of Synthetic Cathinone Positional Isomers**  
*Wyonna Tran, BS\**; *Ira Lurie, PhD*

### General

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- 11:30 AM – 1:00 PM    **Y9**    **Assessing Genetic Diversity Between Wild and Captive Turkeys (*Meleagris gallopavo*) in Pennsylvania**  
*Savannah Nguyen, BA\**; *Lyndsie Ferrara, PhD*; *Lisa Ludvico, PhD*
- 11:30 AM – 1:00 PM    **Y10**    **Comparative Extraction and Identification of Illicit Compounds From Baked Edibles Using Paper Spray Ionization–Tandem Mass Spectrometry and Liquid Chromatography–Triple Quadrupole–Mass Spectrometry**  
*Isabella Haberstock, BS\**; *Lyndsie Ferrara, PhD*; *Michael Van Stipdonk, PhD*; *Hannah Zimmerman-Federle, MS*
- 11:30 AM – 1:00 PM    **Y11**    **Development of a Conserved Semenogelin I and II Epitope for Semen Identification With Respect to Allelic Variation**  
*William Gibbs, BS\**; *Michael Jensen-Seaman, PhD*; *Pamela Marshall, PhD*; *Elizabeth Wisbon, BS, MS*

# YFSF POSTER SESSION

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- 11:30 AM – 1:00 PM    **Y12**    **eDNA Detection of *Lycorma Delicatula* Using Multiple Types of Forensic Swabs via STR Analysis**  
*Maeve Picariello, BA\**; *Bryan Delius, PhD*; *Jay Losiewicz, MA*; *Lisa Ludvico, PhD*
- 11:30 AM – 1:00 PM    **Y13**    **Examining Differences in Exonerations Across the United States**  
*Alexys Karl, BA\**; *Joshua Ellsworth, PhD*; *Lyndsie Ferrara, PhD*; *Stephanie Wetzel, PhD*
- 11:30 AM – 1:00 PM    **Y14**    **Identification of Race Through Chemical Analysis of Latent Fingerprints**  
*Brynn Myers, BS\**; *Mark McCoy, EdD*; *Caitlin Porterfield, MS*
- 11:30 AM – 1:00 PM    **Y15**    **Revisiting the CSI Effect: Has the Popularity of Crime Media Changed Anything?**  
*Elizabeth Diltz, BA\**; *Lyndsie Ferrara, PhD*; *Bobbi Jo Wagner, JD*; *Sara Walker, MSFS*
- 11:30 AM – 1:00 PM    **Y16**    **Streamlining the Extraction and Quantification of Synthetic Cathinone in Oral Fluid by Means of Solid-Phase Extraction (SPE) and LC-MS/MS Analysis**  
*Jacob Katsafanas, BA\**; *Pamela Marshall, PhD*; *Mandy Tinkey, MS*; *Stephanie Wetzel, PhD*
- 11:30 AM – 1:00 PM    **Y17**    **The Development of a Central Mammalian Fur Database**  
*Hailey Adamik, BS\**
- 11:30 AM – 1:00 PM    **Y18**    **Visual Diagnostics for Cartridge Case Impression Evidence**  
*Joseph Zemmels, MS\**; *Heike Hofmann, PhD*; *Susan VanderPlas, PhD*

## Jurisprudence

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- 11:30 AM – 1:00 PM    **Y19**    **America's Court System Through the Lens of a Pandemic: The Past, Present, and Future Adaptations**  
*Julianna Firek, BA\**; *Lyndsie Ferrara, PhD*
- 11:30 AM – 1:00 PM    **Y20**    **Understanding the Use of Forensic Evidence at Trial: A Case Study of Criminal Trials in Ohio**  
*Philip O'Sullivan, MS\**; *Emily Hughes, JD, MA*; *Kori Khan, PhD, JD*

## Pathology/Biology

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- 11:30 AM – 1:00 PM    **Y21**    **Internal Validation of a Modified Procedure for the DNA Collection From Fired Cartridge Casings**  
*Jordan Bowman, BS\**; *Kelly Beatty, MSFS*; *Jessica Skillman, BS*
- 11:30 AM – 1:00 PM    **Y22**    **Splenic Rupture: An Unusual Presentation of Ehlers-Danlos Syndrome With Genetic Confirmation**  
*Megan Schultz\**; *Daniel Schultz, MD*
- 11:30 AM – 1:00 PM    **Y23**    **The Effect of Motor Oil on the Attraction of Forensically Important Diptera in Toco, Trinidad**  
*Alyssa Teixeira\**; *Adrienne Brundage, PhD*; *Kevin Conway, PhD*; *Ryan Mohammed, PhD*
- 11:30 AM – 1:00 PM    **Y24**    **The Impact of Sunscreen on the Attractancy of Forensically Important Flies in Toco, Trinidad**  
*Macy Strain\**; *Adrienne Brundage, PhD*; *Kevin Conway, PhD*; *Ryan Mohammed, PhD*
- 11:30 AM – 1:00 PM    **Y25**    **The Value of the Autopsy: Considerations on Questions Regarding Drug Toxicity**  
*Victoria Sanchez, MS\**; *Daniel Schultz, MD*



# YFSF POSTER SESSION

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- 11:30 AM – 1:00 PM    **Y26**    **Validation for Plate Setup on the QIAgility Instrument Using the Plexor HY Quantitation Kit and GlobalFiler™ Amplification Kit**  
*Madison Davenport, BS\*; Kelly Beatty, MSFS; Jessica Skillman, BS*
- 11:30 AM – 1:00 PM    **Y27**    **Comparing Insanity Defense Evidence: Psychiatric Assessments vs Neuroimaging**  
*Kaitlyn Svencer\*; Lyndsie Ferrara, PhD; Jane Moriarty, JD, MA*

## Toxicology

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- 11:30 AM – 1:00 PM    **Y28**    **The Determination of Hair Growth Rates in Various Anatomical Regions From a Student Campus Population**  
*Samantha Deibel, BS\*; Heather Harris, MFS, JD; Sherri Kacinko, PhD; Karen Scott, PhD*
- 11:30 AM – 1:00 PM    **Y29**    **The Evaluation of Novel Psychoactive Substance Drug Loss From Storage in Serum Separator Tubes**  
*Devin Kress, BS\*; Melissa Fogarty, MSFS; Heather Harris, MFS, JD; Barry Logan, PhD*

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The presenting author index can provide a quick reference to find when and in what section presenting authors are scheduled to present at the 2022 Annual Scientific Conference. The reference table below assists you in finding the section in which the presentation will be given. Letters correspond to the scientific discipline/section in which the presentation is being made while the number corresponds to the numerical sequence of the presentation within the section.

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