American Academy of Forensic Sciences
75th Anniversary Conference

Science Works

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

There are so many highlights this week and I encourage you to review the program (online at 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!
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Officers &amp; Officials</td>
<td>3</td>
</tr>
<tr>
<td>Program Committee</td>
<td>3</td>
</tr>
<tr>
<td>General Information</td>
<td>4</td>
</tr>
<tr>
<td>Sexual Misconduct Resources and Information</td>
<td>5</td>
</tr>
<tr>
<td>Awards</td>
<td>6</td>
</tr>
<tr>
<td>Distinguished Fellow</td>
<td>7</td>
</tr>
<tr>
<td>AAFS Honorary Member</td>
<td>8</td>
</tr>
<tr>
<td>Section Awards</td>
<td>9</td>
</tr>
<tr>
<td>Business Meetings</td>
<td>10</td>
</tr>
<tr>
<td>Financial Contributors</td>
<td>11</td>
</tr>
<tr>
<td>Continuing Education</td>
<td>12</td>
</tr>
<tr>
<td>Diversity and Inclusion in Forensic Sciences Forum and Reception</td>
<td>14</td>
</tr>
<tr>
<td>Student Academy</td>
<td>15</td>
</tr>
<tr>
<td>Forensic Science Education Programs Accreditation Commission Session</td>
<td>17</td>
</tr>
<tr>
<td>Young Forensic Scientists Forum Special Session</td>
<td>18</td>
</tr>
<tr>
<td>Humanitarian and Human Rights Resource Center Symposium</td>
<td>21</td>
</tr>
<tr>
<td>Humanitarian and Human Rights Resource Center Poster Session</td>
<td>23</td>
</tr>
<tr>
<td>NIST-AAFS Special Session</td>
<td>24</td>
</tr>
<tr>
<td>Interdisciplinary Symposium</td>
<td>26</td>
</tr>
<tr>
<td>Keynote Address</td>
<td>28</td>
</tr>
<tr>
<td>Plenary Session</td>
<td>29</td>
</tr>
<tr>
<td>Mentor Program Kickoff Breakfast</td>
<td>31</td>
</tr>
<tr>
<td>75th Anniversary Golden Jubilee</td>
<td>31</td>
</tr>
<tr>
<td>Case Break Sessions</td>
<td>32</td>
</tr>
<tr>
<td>Luncheon Seminars</td>
<td>35</td>
</tr>
<tr>
<td>Workshops</td>
<td>38</td>
</tr>
<tr>
<td>National Institute of Justice</td>
<td>73</td>
</tr>
<tr>
<td>NIJ FTCOE Forum</td>
<td>77</td>
</tr>
</tbody>
</table>

## Scientific Sessions

<table>
<thead>
<tr>
<th>Field</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology</td>
<td>80</td>
</tr>
<tr>
<td>Criminalistics</td>
<td>91</td>
</tr>
<tr>
<td>Digital &amp; Multimedia Sciences</td>
<td>107</td>
</tr>
<tr>
<td>Engineering &amp; Applied Sciences</td>
<td>111</td>
</tr>
<tr>
<td>Forensic Nursing Science</td>
<td>116</td>
</tr>
<tr>
<td>General</td>
<td>119</td>
</tr>
<tr>
<td>Jurisprudence</td>
<td>131</td>
</tr>
<tr>
<td>Odontology</td>
<td>136</td>
</tr>
<tr>
<td>Pathology/Biology</td>
<td>138</td>
</tr>
<tr>
<td>Psychiatry &amp; Behavioral Science</td>
<td>151</td>
</tr>
<tr>
<td>Questioned Documents</td>
<td>154</td>
</tr>
<tr>
<td>Toxicology</td>
<td>156</td>
</tr>
<tr>
<td>Last Word Society</td>
<td>163</td>
</tr>
<tr>
<td>YFSF Poster Sessions</td>
<td>164</td>
</tr>
</tbody>
</table>

| Financial Disclosure       | 167  |
| Key Word Index             | 181  |
| Presenting Author Index    | 193  |
OFFICERS AND OFFICIALS

Officers

President: Laura C. Fulginiti, PhD
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General: Claire E. Shepard, MS
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Psychiatry & Behavioral Science: Dean De Crisce, MD
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Chair: Joyce P. Williams, DNP
Secretary: Amy Y. Carney, PhD

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Secretary: Denise C. Murmann, DDS

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

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Chair: Sebastien S. Prat, MD
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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

Program Chair: Kristen Hartnett-McCann, PhD
Program Co-Chair: Matthew R. Wood, PhD
Plenary Session: James R. Gill, MD
Poster Sessions: Alex J. Krotulski, PhD
Workshops: Andrew C. Seidel, PhD
Luncheon Seminars: Linton A. Mohammed, PhD
Last Word Society: Kenneth E. Melson, JD
Bring Your Own Slides: J.C.U. Downs, MD
Student Academy: Marilyn T. Miller, EdD
Interdisciplinary Symposium: Paul Messner, JD
Local Arrangements: Candice Bridge, PhD
Anthropology: Debra P. Zinni, PhD

Criminalistics: Sheree R. Hughes, PhD
Digital & Multimedia Sciences: Agnes D. Winokur, MS
Engineering & Applied Sciences: Joseph Levi White, PhD
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Psychiatry & Behavioral Science: Erin P. Koester, MS
Questioned Documents: Leigh M. Tomlin, JD
Toxicology: Terry-Dawn Hewitt, LLM
Young Forensic Scientists Forum: Phyllis Ho, DDS

Pathology/Biology: Owen L. Middleton, MD
Psychiatry & Behavioral Science: Corina Freitas, MD
Questioned Documents: Keshia T. White, BS
Toxicology: Diane Boland, PhD
Young Forensic Scientists Forum: Dayong Lee, PhD

Local Arrangements: Candice Bridge, PhD
Anthropology: Debra P. Zinni, PhD

Teresa V. Wilson, PhD

2023 Program Committee
GENERAL INFORMATION

**Registration Desk Hours**

<table>
<thead>
<tr>
<th>Day</th>
<th>Date</th>
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<th>End Time</th>
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<td>February 12</td>
<td>1:00 PM</td>
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<td>Monday</td>
<td>February 13</td>
<td>6:45 AM</td>
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<tr>
<td>Tuesday</td>
<td>February 14</td>
<td>6:45 AM</td>
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<td>Wednesday</td>
<td>February 15</td>
<td>6:45 AM</td>
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<td>Thursday</td>
<td>February 16</td>
<td>6:45 AM</td>
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<tr>
<td>Friday</td>
<td>February 17</td>
<td>6:45 AM</td>
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<tr>
<td>Saturday</td>
<td>February 18</td>
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**Exhibit Hall Hours**

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<tbody>
<tr>
<td>Wednesday</td>
<td>February 15</td>
<td>11:30 AM</td>
<td>4:00 PM</td>
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<tr>
<td>Thursday</td>
<td>February 16</td>
<td>9:00 AM</td>
<td>2:00 PM</td>
</tr>
<tr>
<td>AAFS Reception</td>
<td>(Exhibits Open)</td>
<td>6:00 PM</td>
<td>8:00 PM</td>
</tr>
<tr>
<td>Friday</td>
<td>February 17</td>
<td>8:00 AM</td>
<td>2:00 PM</td>
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</tbody>
</table>

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

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

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

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

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

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

**Future AAFS Annual Conferences**

<table>
<thead>
<tr>
<th>Year</th>
<th>Conference</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2024</td>
<td>AAFS Annual Conference</td>
<td>February 19-24, 2024</td>
</tr>
<tr>
<td></td>
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<td>Denver Convention Center</td>
</tr>
<tr>
<td></td>
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<td>Denver, CO</td>
</tr>
<tr>
<td>2025</td>
<td>AAFS Annual Conference</td>
<td>February 17-22, 2025</td>
</tr>
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<td></td>
<td></td>
<td>Baltimore Convention Center</td>
</tr>
<tr>
<td></td>
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<td>Baltimore, MD</td>
</tr>
<tr>
<td>2026</td>
<td>AAFS Annual Conference</td>
<td>February 9-14, 2026</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ernest N. Morial Convention Center</td>
</tr>
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<td></td>
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<td>New Orleans, LA</td>
</tr>
</tbody>
</table>
SEXUAL MISCONDUCT
RESOURCES AND INFORMATION

AAFS takes the safety of its meeting attendees seriously and strives to promote a welcoming experience for all. In order to promote a safe environment for meeting attendees, we have resources for meeting attendees about sexual misconduct.

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

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

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

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

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

Resources:
AAFS “safe person”: 917-678-7197
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

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

Distinguished Fellow

Julie A. Howe, MBA

AAFS Honorary Member

Anne H. Warren, BS

Humanitarian and Human Rights Resource Center’s Clyde Snow Award

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

FSF Emerging Forensic Scientist Award

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

Tori L. Schaffer, BS
(to be presented during the Criminalistics Section Business Meeting)
DISTINGUISHED FELLOW

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 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!
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

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

### Section Award Honorees

<table>
<thead>
<tr>
<th>Section Section's</th>
<th>Award</th>
<th>Honoree</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anthropology Section's</strong></td>
<td>Ellis R. Kerley Research Award</td>
<td>Yangseung Jeong, PhD</td>
</tr>
<tr>
<td></td>
<td>Outstanding Mentorship Award</td>
<td>Peer H. Moore-Jansen, PhD</td>
</tr>
<tr>
<td></td>
<td>Diversity and Inclusion Award</td>
<td>Ginelle Kocher</td>
</tr>
<tr>
<td></td>
<td>J. Lawrence Angel Award</td>
<td>Taylor Lambrigger, MA</td>
</tr>
<tr>
<td><strong>Criminalistics Section's</strong></td>
<td>Paul L. Kirk Award</td>
<td>Pierre A. Margot, PhD</td>
</tr>
<tr>
<td></td>
<td>Mary E. Cowan Outstanding Service Award</td>
<td>Michael D. Coble, PhD</td>
</tr>
<tr>
<td></td>
<td>Meritorious Service Award</td>
<td>Marilyn T. Miller, EdD</td>
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<tr>
<td><strong>Digital &amp; Multimedia Sciences Section's</strong></td>
<td>Outstanding Case Study Award</td>
<td>Joseph Levi White, PhD</td>
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<tr>
<td></td>
<td>Outstanding Student Research Award</td>
<td>Austin Cauley, BS</td>
</tr>
<tr>
<td><strong>Engineering &amp; Applied Sciences Section's</strong></td>
<td>Steven Charles Batterman Award</td>
<td>Steven Charles Batterman, PhD</td>
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<tr>
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<td>Laura Liptai, PhD</td>
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<tr>
<td><strong>Forensic Nursing Science Section's</strong></td>
<td>Forensic Nurse Scientist Award</td>
<td>Julie L. Valentine, PhD</td>
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<tr>
<td></td>
<td>Forensic Nurse Innovator Award</td>
<td>Patricia M. Speck, DNSc</td>
</tr>
<tr>
<td><strong>General Section's</strong></td>
<td>Paul W. Kehres Meritorious Service Award</td>
<td>Gina M. Londino-Smolar, MS</td>
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<tr>
<td></td>
<td>John R. Hunt Award</td>
<td>Katherine M. Brown, PhD</td>
</tr>
<tr>
<td><strong>Jurisprudence Section's</strong></td>
<td>Harold A. Feder Award</td>
<td>Paul Messner, JD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Andrew Sulner, MSFS, JD</td>
</tr>
<tr>
<td><strong>Odontology Section's</strong></td>
<td>Reidar F. Sognnaes Award</td>
<td>Charles Michael Bowers, DDS</td>
</tr>
<tr>
<td></td>
<td>Lester Luntz Odontology Award</td>
<td>Paula Brumit, DDS</td>
</tr>
<tr>
<td><strong>Pathology/Biology Section's</strong></td>
<td>Milton Helperrn Award</td>
<td>Joyce L. deJong, DO</td>
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<tr>
<td></td>
<td>Best Resident Paper Award</td>
<td>Charles Rohrer, MD</td>
</tr>
<tr>
<td></td>
<td>Award for Achievement in the Forensic Life Sciences</td>
<td>Jeffrey D. Wells, PhD</td>
</tr>
<tr>
<td><strong>Questioned Documents Section's</strong></td>
<td>Maureen Casey-Owens Award</td>
<td>Larry A. Olson, MFS</td>
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<tr>
<td><strong>Toxicology Section's</strong></td>
<td>Irving Sunshine Award</td>
<td>Rebecca L. Hartman, PhD</td>
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BUSINESS MEETINGS

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

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

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

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FORENSIC Radiology Group

The science of what’s possible.
CONTINUING EDUCATION

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

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

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

Learning Objectives of the AAFS Continuing Education Program

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

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

Overall Purpose and Objective Statements for Major Aspects of AAFS Programs

Workshops and Special Sessions
Purpose: To provide an opportunity for experts to present material and to lead discussion and practical exercises related to forensic science methods, procedures, diagnosis, investigation, professional relations and practices, communication, administration, and professional development.
Learning Overview: Detailed individually in each workshop and special session announcement and description.

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

Oral and Poster Section Scientific Sessions
Purpose: To provide an opportunity for presentation and discussion of case reports, descriptive studies, review presentations, research, administrative issues, and investigative/diagnostic methods regarding topics and issues of importance to a primary discipline among the forensic sciences.
Learning Overview: To meet the educational objectives stated by each presenter for his/her/their presentation.

Last Word Society
Purpose: To provide a retrospective forensic analysis of historical events and to provide education about the history and evolution of forensic sciences as well as the modern methods and technologies used to re-examine past events of forensic science interest. Emphasis is placed on the evaluation of the original opinions and case outcome and on the development of newer hypotheses based on the re-analysis.
Learning Overview: To meet the educational objectives stated by each presenter for his/her/their presentation.
CONTINUING EDUCATION

Guidelines For Claiming Credit

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

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

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

Joint Accreditation Statement

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

Physician Continuing Medical Education Credit

The Postgraduate Institute for Medicine designates this live activity for a maximum of 45.75 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Dental Continuing Education Credit

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

Postgraduate Institute for Medicine is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of the credit hours by boards of dentistry. The Postgraduate Institute for Medicine designates this activity for 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.

Legal Continuing Education Credit

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

Non Physician Continuing Education Credit

A general non physician certificate of attendance will be available.

General Continuing Education Credit

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

Open to All Meeting Registrants

Tuesday, February 14, 2023
8:00 PM - 10:00 PM

We Say Gay: The Intersectionality of Science

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.

Moderated by the AAFS Diversity Outreach Committee
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

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

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

Digital & Multimedia Sciences:
Douglas Lacey, BS, MS
BEK TEK LLC
Stafford, VA

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

Engineering & Applied Sciences:
Roy Crawford, BSME
R.R. Crawford Engineering
Whitesburg, KY

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

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

Questioned Documents:
Kelsey Osborn, BS
Osborn & Son
Middlesex, NJ

T.L. Williams, MFS
U.S. Army Criminal Investigation Command
Quantico, VA

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

Ashraf Mozayani, PhD
Texas Southern University
Houston, TX

Jurisprudence:
Pamela A.W. King, JD
Minnesota State Public Defender Office
Rochester, MN
STUDENT ACADEMY

Program:

9:00 AM - 9:10 AM  Introduction  
  Marilyn T. Miller, EdD

9:10 AM - 9:20 AM  Welcome  
  Laura C. Fulginiti, PhD

9:20 AM - 9:30 AM  “The Case”  
  Lynn A. Schneeweis, MS

The Forensic Sciences Group I Disciplines

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

9:45 AM - 10:00 AM  Anthropology  
  Ginesse A. Listi, PhD

10:00 AM - 10:15 AM  Odontology  
  Lilliian A. Nawrocki, DDS

10:15 AM - 10:30 AM  Toxicology  
  George Jackson, PhD; Ashraf Mozayani, PhD

10:30 AM - 10:45 AM  Digital & Multimedia Sciences  
  Douglas Lacey, BS, MS

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

The Forensic Sciences Group II Disciplines

11:00 AM - 11:15 AM  General  
  Brian S. Clark, MFS; T.L. Williams, MFS

11:15 AM - 11:30 AM  Criminalistics  
  Kelly Knight, MS

11:30 AM - 11:45 AM  Questioned Documents  
  Kelsey Osborn, BS

11:45 AM - 12:00 PM  Engineering & Applied Sciences  
  Roy Crawford, BSME

12:00 PM - 12:15 PM  Psychiatry & Behavioral Science  
  Emily D. Gottfried, PhD

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

1:30 PM - 1:45 PM  Case Conclusion  
  Pamela A.W. King, JD

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

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

Chair:  
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.

Program:

8:30 AM - 9:00 AM  
Introduction and Welcoming Remarks/Module 1: What to Know About FEPAC  
Heidi Eldridge, PhD

9:00 AM - 9:30 AM  
Module 2: An Overview of the FEPAC Application Process  
Thomas Brettell, PhD

9:30 AM - 10:00 AM  
Module 3: A Review of Self-Study Standards 3.0—General for All Programs  
Sarah Seashols Williams, PhD

10:00 AM - 10:15 AM  
Break

10:15 AM - 10:45 AM  
Module 4: A Review of Self-Study Standards 4.0—Undergraduate Programs  
Josh Brunty, MS

10:45 AM - 11:15 AM  
Module 5: A Review of Self-Study Standards 5.0—Graduate Programs  
A. Karl Larsen, PhD

11:15 AM - 11:45 AM  
Module 6: Accreditation Decisions and Categories, Appeals Process, Annual Reports, Substantive Changes, and Post-Visit Survey  
Heidi Eldridge, PhD

11:45 AM - 12:15 PM  
Module 7: FEPAC On-Site Evaluator Training  
Jason L. Schroeder, MS

12:15 PM - 12:45 PM  
Questions and Answers  
FEPAC Commissioners and Accreditation Coordinator
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

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. Kammrath, 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, Vaud, 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

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  Introduction to the YFSF
   Zain Bhaloo, MSc

8:20 AM  -  8:40 AM  Membership in AAFS
   Cheryl Hunter

8:40 AM  -  9:00 AM  Stand Up for Science
   Laura Fulginiti, PhD

9:00 AM  -  9:20 AM  When You Wish Upon a Star
   C. Ken Williams, MSc, JD

9:20 AM  -  9:40 AM  Lessons Learned During the Evolution of Forensic DNA Testing
   Charlotte Word, PhD

9:40 AM  -  10:00 AM  Forensic Science and Legal Education
   Brandon L. Garrett, JD

10:00 AM  -  10:15 AM  Break

10:15 AM  -  10:35 AM  Professional Growth: Stages in the Arc of Your Career in Forensic Science
   Barry K. Logan, PhD

10:35 AM  -  10:55 AM  Four-Plus Decades in Forensic Science: Adapting to a Changing Environment
   Gregory E. Laskowski, MPA

10:55 AM  -  11:15 AM  From Farmboy to Forensic Scientist
   Paul Yount, MSFS

11:15 AM  -  11:35 AM  Forensic Science Experts—What the Judge and Jury Expect
   Donald E. Shelton, PhD
S1 Education, Training, and Experiences: The Ingredients to Make Science Work!

Program cont.:

11:35 AM - 11:55 AM
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
Elaine M. Pagliaro, JD

11:55 AM - 1:00 PM
BREAK

1:00 PM - 1:40 PM
“The Past, Present, and Future” of Forensic Science and Forensic Education
Henry C. Lee, PhD

1:40 PM - 2:00 PM
Complications of Additive Manufacturing in Forensic Science
Corey W. Scott, MSFS

2:00 PM - 2:20 PM
Traces for Reconstruction and Investigation Leads
Brooke W. Kammrath, PhD

2:20 PM - 2:40 PM
Using Forensic Entomology to Promote Multidisciplinary Involvement and Collaboration in the Forensic Sciences
Denise Gemmellaro, PhD

2:40 PM - 2:55 PM
BREAK

2:55 PM - 3:15 PM
Redefining Failure: The “Ingredient” in Scientific Success That You Never See
Carrie Polston, PhD

3:15 PM - 3:35 PM
So You Want to be a Medicolegal Death Investigator
Erin Worrell, BSc

3:35 PM - 3:55 PM
Starting Off With a Bang!: My Experience in Becoming an Explosives Chemist
Dayla Rich, PhD

3:55 PM - 4:15 PM
The Science of Going to Work Faster and Better: Improve Your Results Tomorrow
Dirk M. Vastrick, BA

4:15 PM - 4:55 PM
Resume Review Workshop
Dirk M. Vastrick, BA

4:55 PM - 5:00 PM
Closing of the YFSF Special Session
Emily Rue, PhD
# 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

**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 HHRC 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.

**Speakers:**
- **Jose Pablo Baraybar, PhD**  
  Forensic Unit, International Committee of the Red Cross
- **Joye M. Carter, MD**  
  Former Chief Forensic Pathologist of San Luis Obispo, CA
- **Stephen Cordner, MA, MBBS**  
  Consultant Forensic Specialist, Victorian Institute of Forensic Medicine
- **Mercedes Doretti, Lic.**  
  Equipo Argentino de Antropología Forense
- **Jamie Ferrell, MBA, RN**  
  Memorial Hermann - Texas Medical Center
- **Pierre Guyomarc’h, PhD**  
  Forensic Unit, International Committee of the Red Cross
- **Virginia Lynch, MSN, RN**  
  Forensic Nurse Consultants, International
- **Maria Dolores Morcillo Mendez, MD**  
  Forensic Unit, International Committee of the Red Cross
- **Joanna Naples-Mitchell, JD**  
  Physicians for Human Rights
- **Jane Amelia Taylor, BDS, MD**  
  Forensic Unit, International Committee of the Red Cross
- **Morris Tidball-Binz, MD**  
  UN Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions
- **Julie Valentine, PhD, RN**  
  Brigham Young University College of Nursing
- **Duarte Vieira, MD, PhD**  
  Chairman of the Coimbra University Centre for Humanitarian and Human Rights Research and Training  
  Chairman of the Scientific Advisory Board of the Prosecutor of the International Criminal Court
## HHRRC SYMPOSIUM

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

**Program:**

<table>
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<tr>
<th>Time</th>
<th>Session</th>
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| 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.

Tuesday

February 14, 2023 6:00 PM – 8:00 PM

Moderator:  Co-Moderator:
Dawnie W. Steadman, PhD  Jeri D. Ropero-Miller, PhD
HHRRC Chair  AAFS Past President (2021-2022)
Director, Forensic Anthropology Center  FTCoE Project Director
University of Tennessee  RTI International
Knoxville, TN  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. Sablouh; 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

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

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

### S3 Implementation of Standards: OSAC Registry Checklists

**Program:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM – 8:15 AM</td>
<td><strong>Introduction</strong></td>
<td>Sarah Kerrigan, PhD</td>
</tr>
<tr>
<td>8:15 AM – 8:35 AM</td>
<td><strong>The Role of NIST in Consensus-Based Standards</strong></td>
<td>Allison Getz, BS</td>
</tr>
<tr>
<td>8:35 AM – 8:50 AM</td>
<td><strong>Overview of the NIST-AAFS Checklist Initiative</strong></td>
<td>Laurel Farrell, BA</td>
</tr>
<tr>
<td>8:50 AM – 9:50 AM</td>
<td>Demonstration and Use of the Checklist</td>
<td>Erika Ziemak, MSFS</td>
</tr>
<tr>
<td>9:50 AM – 10:00 AM</td>
<td><strong>Interactive Quiz</strong></td>
<td>Sarah Kerrigan, PhD</td>
</tr>
<tr>
<td>10:00 AM – 10:20 AM</td>
<td><strong>BREAK</strong></td>
<td></td>
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<tr>
<td>10:20 AM – 10:35 AM</td>
<td><strong>Role of AFQAM and QM Perspective</strong></td>
<td>Lori Nix, BS</td>
</tr>
<tr>
<td>10:35 AM – 11:15 AM</td>
<td><strong>Practical Implementation of Checklists in an Operational Setting</strong></td>
<td>Erika Ziemak, MSFS; Jason Bundy; Pamela Sale, BS</td>
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<tr>
<td>11:15 AM – 12:00 PM</td>
<td><strong>Panel Discussion</strong></td>
<td>Sarah Kerrigan, PhD; Allison Getz, BS; Laurel Farrell, BA; Erika Ziemak, MSFS; Lori Nix, BS; Jason Bundy; Pamela Sale, BS</td>
</tr>
</tbody>
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INTERDISCIPLINARY SYMPOSIUM

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

Chair: Katie Wells, MPH, BSN, RN
Adventist HealthCare Shady Grove Medical Center
Brunswick, MD

Co-Chair: Jessica Volz, DNP
Adventist HealthCare Shady Grove Medical Center
Brunswick, MD

Faculty:
G. David Annas, MD
Forensic Psychiatry Consulting, LLC
Syracuse, NY

Carl R. McClary, MS
Bureau of Alcohol, Tobacco, and Firearms
Atlanta, GA

Barry A.J. Fisher, MS, MBA
Indio, CA

Kenneth E. Melson, JD
The George Washington University Law School
Washington, DC

Corina Freitas, MD
Freitas and Associates
Alexandria, VA

Christopher Milroy, MD
Eastern Ontario Regional Forensic Pathology Unit
Ottawa, ON CANADA

George W. Hime, MS
Miami-Dade Medical Examiner Department
Miami, FL

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

S4 The Formation of the American Academy of Forensic Sciences

Program:

1:15 PM – 1:30 PM  Welcome and Introduction of Faculty  
Katie, Wells, MPH, BSN, RN

1:30 PM – 2:00 PM  Jurisprudence  
Kenneth E. Melson, JD

2:00 PM – 2:30 PM  Criminalistics  
Barry A.J. Fisher, MS, MBA

2:30 PM – 3:00 PM  Pathology/Biology  
Christopher Milroy, MD

3:00 PM – 3:15 PM  BREAK

3:15 PM – 3:45 PM  Psychiatry & Behavioral Science  
Corina Freitas, MD; G. David Annas, MD

3:45 PM – 4:15 PM  Questioned Documents  
Carl R. McClary, MS

4:15 PM – 4:45 PM  Toxicology (formerly known as Immunology)  
George W. Hime, MS

4:45 PM – 5:15 PM  Panel Discussion/Questions and Answers  
Jessica Volz, DNP
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).

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.
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  Welcome and Opening Remarks
Laura C. Fulginiti, PhD; James R. Gill, MD

10:10 AM - 10:35 AM  The Forensic Pathology Perspective
Joyce L. deJong, DO

10:35 AM - 11:00 AM  The Forensic Anthropology Perspective
Christian Crowder, PhD

11:00 AM - 11:25 AM  The Judicial Perspective
Pamela A.W. King, JD

11:25 AM - 11:30 AM  Panel Discussion
Laura C. Fulginiti, PhD; James R. Gill, MD; Joyce L. deJong, DO; Christian Crowder, PhD; Pamela A.W. King, JD
MENTORSHIP PROGRAM BREAKFAST

RSVP was Required by Jan. 13

Thursday, February 16, 2023 7:30 AM – 8:30 PM

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.

75TH ANNIVERSARY DIAMOND JUBILEE CELEBRATION

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

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

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 . . .”.¹ 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.¹ 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.²

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.”²

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):
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, gabapentenoids, 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.
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

Elena Forzese, MD  Claudina Pitrone, MD
Messina University  Messina University
Messina, ITALY  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

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

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

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 exemple 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

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

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.
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

Co-Chair:
Gina Londino-Smolar, MS
IUPUI
Indianapolis, IN

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

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  Opening Remarks
Gina Londino-Smolar, MS

8:45 AM – 9:30 AM  Introduction to Scientific Publishing
Lerah Sutton, PhD

9:30 AM – 10:15 AM  Building a Strong Foundation for Your Publication
Adrienne Brundage, PhD

10:15 AM – 10:30 AM  BREAK

10:30 AM – 11:15 AM  Identifying Where to Publish Your Work
Kelly Elkins, PhD

11:15 AM – 12:00 PM  Working Within the Peer Review Process
Jason Byrd, PhD

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

W1  Investigating Publishing: How to Disseminate your Work

Program cont.

12:00 PM – 1:15 PM  BREAK

1:15 PM – 2:00 PM  Transitioning Casework in Professional Publications and Portfolios
Sharon Plotkin, EdD

2:00 PM – 2:45 PM  Breakout Session

2:45 PM – 3:00 PM  BREAK

3:00 PM – 3:45 PM  Promoting Your Publication in Social Media
Gina Londino-Smolar, MS

3:45 PM - 4:00 PM  Closing Remarks
Jason Byrd, PhD

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

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
Asterdam, NETHERLANDS

Target Audience: Anthropology, General, Pathology/Biology

Knowledge Level Required: Basic
WORKSHOPS

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

Program:

8:30 AM – 9:00 AM  Introductions, Background, and Historical Overview  
Michael Thali, MD

9:00 AM – 9:30 AM  Integrating Forensic Imaging Into the Medicolegal Investigation: Practical Steps  
Edward L Mazuchowski, MD, PhD

9:30 AM – 10:00 AM  Development of a Forensic CT Service in a Medical Examiner Office  
Natalie L. Adolphi, PhD

10:00 AM – 10:30 AM  PMCT Status in Australia: An International Perspective  
Chris O’Donnell, MBBS

10:30 AM – 10:45 AM  BREAK

10:45 AM – 11:30 AM  Directed PMCT Angiography and Evaluation of Resuscitative Medical Therapy  
Edward L Mazuchowski, MD, PhD

11:30 AM – 12:00 PM  Forensic Postmortem CT in Children: Application and Limitations  
Rick R. van Rijn, MD, PhD

12:00 PM – 12:30 PM  Interactive Cases I  
Rick van Rijn, MD, PhD

12:30 PM – 1:30 PM  BREAK

1:30 PM – 2:00 PM  PMCT in Disaster Victim Identification  
Summer Decker, PhD

2:00 PM – 2:30 PM  Postmortem Cardiac Imaging  
Fabrice Dedouit, MD, PhD

2:30 PM – 3:05 PM  3D Visualization in Forensic Postmortem Radiology: Possibilities and Examples  
Summer Decker, PhD

3:05 PM – 3:20 PM  BREAK

3:20 PM – 3:50 PM  The Use of MRI in Forensic Postmortem Imaging  
Hideki Hyodoh MD, PhD

3:50 PM – 4:30 PM  Emerging Technologies in Forensic Imaging  
Jonathan Ford, PhD; Lars Ebert, PD, PhD

4:30 PM – 5:00 PM  Interactive Cases II  
Summer Decker, PhD; Lars Ebert, PD, PhD; Jonathan Ford, MD

All times are in the U.S. Eastern Time Zone
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  How to Practically Establish Multidisciplinary Audience-Based Communication
Julie Burrill, PhD

10:00 AM – 12:00 PM  Human Factors in Forensic Testing and Reporting
Tiffany Roy, JD, MS

12:00 PM – 1:00 PM  BREAK

1:00 PM – 3:00 PM  Case Assessment & Interpretation: Review & Application of DNA-TPPR Research
Cynthia Cale, MS

3:00 PM – 5:00 PM  Case Examples From the Idaho Innocence Project and the Forensic Justice Project
Greg Hampikian, PhD

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

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

Presenters:
Claude Roux, PhD
University of Technology Sydney
Sydney, AUSTRALIA

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

Duarte Vieira, MD
University of Coimbra
Coimbra, PORTUGAL

James McKim, PMP
Organizational Ignition, LLC
Goffstown, NH

Co-Chair:
Gina Londino-Smolar, MS
IUPUI
Indianapolis, IN

Ann Geisendorfer, JD
SUNY Delhi
Delhi, NY

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

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

Target Audience: All Sections

Knowledge Level Required: Basic

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

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

<table>
<thead>
<tr>
<th>Time</th>
<th>Session Description</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM – 8:35 AM</td>
<td>Introduction</td>
<td>J.C.U. Downs, MD</td>
</tr>
<tr>
<td>8:35 AM – 9:15 AM</td>
<td>DEI in Everyday Forensic Practice</td>
<td>Claude Roux, PhD</td>
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<tr>
<td>9:15 AM – 10:00 AM</td>
<td>Bias in the Classroom</td>
<td>Ann Geisendorder, JD</td>
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<td>10:00 AM – 10:15 AM</td>
<td>BREAK</td>
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<tr>
<td>10:15 AM – 11:00 AM</td>
<td>Bias in Medicine</td>
<td>Jan Gorniak, DO</td>
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<tr>
<td>11:00 AM – 11:45 AM</td>
<td>Representing Those We Dislike</td>
<td>Ashley Pennington, JD</td>
</tr>
<tr>
<td>11:45 AM – 12:00 PM</td>
<td>Questions and Answers</td>
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<tr>
<td>12:00 PM – 1:30 PM</td>
<td>BREAK</td>
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<tr>
<td>1:30 PM – 2:15 PM</td>
<td>DEI in Humanitarian Forensic Action</td>
<td>Duarte Vieira, MD</td>
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<tr>
<td>2:15 PM – 3:00 PM</td>
<td>The Pulse Shooting–The Phoenix Rises</td>
<td>Robin Maynard, AS</td>
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<tr>
<td>3:00 PM – 3:15 PM</td>
<td>BREAK</td>
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<tr>
<td>3:15 PM – 4:45 PM</td>
<td>The Diversity Factor: Igniting Superior Organizational Performance</td>
<td>James McKim, PMP</td>
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<tr>
<td>4:45 PM – 5:00 PM</td>
<td>Questions and Answers</td>
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*Proceeds from this workshop will benefit the Forensic Sciences Foundation.*

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

### Pre-Registration Required by Jan. 30

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

<table>
<thead>
<tr>
<th>Monday, February 13, 2023</th>
<th>8:30 AM – 5:15 PM</th>
<th>CE Hours: 7.0</th>
</tr>
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**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

Samuel Poindexter  
Defense POW/MIA Accounting Agency  
Honolulu, HI

Suni Edson, PhD  
Armed Forces DNA Laboratory  
Dover Air Force Base, 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

W6  How Science Works to Identify Unknown Decedents Decades After Death

Program:

8:30 AM – 8:45 AM  Welcome & Overview  
John Byrd, PhD

8:45 AM – 9:30 AM  Science Begins in the Field with Forensic Archaeology  
Denise To, PhD

9:30 AM – 10:15 AM  Forensic Anthropology at the DPAA  
Rebecca Wilson-Taylor, PhD

10:15 AM – 10:30 AM  BREAK

10:30 AM – 11:15 AM  Dental Identifications in Military Cases at the DPAA  
J.S. DeMeo, DMD

11:15 AM – 12:00 PM  Contextual, Circumstantial, and Individualizing Data of Material Evidence  
Owen O’Leary, PhD

12:00 PM – 1:00 PM  BREAK

1:00 PM – 1:45 PM  Chest Radiograph Comparison in Identifications of U.S. Military Personnel  
Susan Jaques, MA

1:45 PM – 2:15 PM  The Power of DNA for Cold Case Resolution: Time Depth, Relationships, and Technology  
Suni Edson, PhD

2:15 PM – 2:30 PM  BREAK

2:30 PM – 3:15 PM  Isotope Testing in the Forensic Identification Process  
Lesley Chesson, MS

3:15 PM – 4:00 PM  The Need for Robust Quality Assurance and Data Management Programs and Benefits of ANAB Accreditation  
Elizabeth Andreas-Feeney, BS; Kristin Bukovec, BS

4:00 PM – 4:15 PM  BREAK

4:15 PM – 5:00 PM  All the Puzzle Pieces Fit: Personal Identification at the DPAA  
Gregory Berg, PhD

5:00 PM – 5:15 PM  Questions and Answers

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

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

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

Karen Reczek, MLS
NIST
Rockville, 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
*Introduction and What’s New Since AAFS 2022*
*Teresa Ambrosius, BA*

8:45 AM - 9:15 AM
*How to Write a Good Standard*
*Karen Reczek, MLS*

9:15 AM - 9:45 AM
*What is Consensus and How Do We Get There?*
*Agnes Winokur, MS*

9:45 AM - 10:00 AM
*BREAK*

10:00 AM - 10:30 AM
*The Best Way to Write and Submit Comments*
*Marc LeBeau, PhD*

10:30 AM - 11:00 AM
*How Are Comments Adjudicated?*
*Kevin P. Kulbacki, MSFS*

11:00 AM - 11:15 AM
*How Can YOU Get Involved in the Standards*
*Allison Getz, MS*

11:15 AM - 12:00 PM
*Questions and Answers*
**WORKSHOPS**

*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

*Patricia Carbajales-Dale, MS*  
Clemson University  
Clemson, SC

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

**Knowledge Level Required:** Basic
WORKSHOPS

W8  Postmortem Interval Estimation Using a Novel Data Set and Methods

Program:

8:30 AM – 8:45 AM  Introduction and Background
   Katherine E. Weisensee, PhD

8:45 AM – 9:15 AM  Survey Instrument and Data Manual
   Cristina I. Tica, PhD

9:15 AM – 10:00 AM  ArcGIS and Spatially Coded Environmental Data for Informing Models of Decomposition
   Patricia Carbajales-Dale, MS

10:00 AM – 10:15 AM  BREAK

10:15 AM – 11:00 AM  Machine-learning Models for Predicting PMI
   Carl Ehrett, PhD

11:00 AM – 11:45 AM  Bayesian Methods for Generating Understanding of Decomposition Process
   D. Hudson Smith, PhD

11:45 AM – 12:00 PM  Open Science, Wrap-up, and Discussion of Next Steps
   Katherine E. Weisensee, PhD

All times are in the U.S. Eastern Time Zone
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  Introduction of Speakers, Topic, & Basic Psychiatry
Corina Freitas, MD

10:00 AM – 12:00 PM  History of Forensic Psychiatry and How to Formulate a Psychiatric-Legal Question
Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD

12:00 PM – 1:00 PM  BREAK

1:00 PM – 2:00 PM  Ethics in Forensic Psychiatry
Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD

2:00 PM – 3:00 PM  DSM-5, Diagnoses, and Psychological Testing
Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD

3:00 PM – 3:15 PM  BREAK

3:15 PM – 4:30 PM  Active Case Participation
Corina Freitas, MD; Vivian Shnaidman, MD; George D. Annas, MD

4:30 PM – 5:00 PM  Questions and Answers

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

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

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, Δ8-THC, Δ10-THC, Δ6a-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

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

Program:

1:00 PM – 1:10 PM  Introduction: Cannabis and THC Isomer Products Proliferation
Nicholas B. Tiscione, MS

1:10 PM – 1:30 PM  National Cannabis Legislation and Regulations
Michelle R. Peace, PhD

1:30 PM – 1:50 PM  THC Mythology and Knowledge Gap Analysis
Michelle R. Peace, PhD

1:50 PM – 2:00 PM  The Scope of THC Analogue Analytical Challenges
Alaina Holt, BS

2:00 PM – 2:30 PM  THC Psychosis: Historical Perspective and Modern Incidents
Justin L. Poklis, BS

2:30 PM – 2:45 PM  BREAK

2:45 PM – 3:00 PM  THC Adverse Effects Potential Mechanisms: Modern Literature
Michelle R. Peace, PhD

3:00 PM – 3:45 PM  Case Reports From the Practitioner Lab–Typical THC Impairment vs. THC Madness (Forensic Cases)
Nicholas B. Tiscione, MS

3:45 PM – 4:00 PM  Case Report From the Research Lab–Self-Reported, Requested Product Analysis
Alaina Holt, BS

4:00 PM – 4:20 PM  Case Report From the Practitioner–Psychiatric Clinical Case
Adam White, PhD

4:20 PM – 4:30 PM  Questions and Answers

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

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

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

W14 Transfer and Persistence of Physical Evidence: Deciphering Implications

Program:

8:30 AM – 8:45 AM  Introduction  
    W. Kamrath, PhD; Elaine M. Pagliaro, JD

8:45 AM – 9:15 AM  Transfer & Persistence: Lessons Learned  
    Henry C. Lee, PhD

9:15 AM – 9:45 AM  Transfer & Persistence of DNA—Current Knowledge and Implications  
    David San Pietro, PhD

9:45 AM – 10:00 AM  Discussion

10:00 AM – 10:30 AM  BREAK

10:30 AM – 11:00 AM  Transfer & Persistence of Fibers, Drugs, Ignitable Liquids, and More—Current Knowledge and Implications  
    Brooke W. Kamrath, PhD

11:00 AM – 12:00 PM  Hands-On Transfer & Persistence Activities: DNA, Fibers, and More  
    Pauline E. Leary, PhD; Claire L. Glynn, PhD

12:00 PM – 1:00 PM  BREAK

1:00 PM – 2:30 PM  Hands-On Transfer & Persistence Activities: DNA, Fibers, and More (cont’d)  
    Pauline E. Leary, PhD; Claire L. Glynn, PhD

2:30 PM – 3:00 PM  Discussion of Transfer & Persistence Activities  
    Pauline E. Leary, PhD; Claire L. Glynn, PhD

3:00 PM – 3:30 PM  BREAK

3:30 PM – 4:00 PM  Transfer & Persistence: Legal Precedents and Implications  
    Elaine M. Pagliaro, JD

4:00 PM – 4:30 PM  Deciphering Transfer & Persistence: A Holistic View  
    Peter R. De Forest, DCrim

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### WORKSHOPS

**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**

**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.

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**Chair:**

**Lorenzo Gatto, 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
W16  Practical Cardiovascular Pathology for Medical Examiners: Basic Concepts and Advanced Principles

Program:

8:30 AM – 8:45 AM  Workshop Introduction  
*Lorenzo Gitto, MD; Ponni Arunkumar, MD*

8:45 AM – 9:00 AM  Cardiac Pathology and the Medical Examiner  
*Ponni Arunkumar, MD*

9:00 AM – 9:30 AM  Heart Anatomy, Histology, Physiology  
*Sarah Thomas, MD; Gregory Webster, MD*

9:30 AM – 10:00 AM  Atherosclerosis, Hypertension, Ischemic Heart Disease, Diseases of the Major Vessels, Valve Diseases  
*David Waters, MD*

10:00 AM – 10:15 AM  BREAK

10:15 AM – 10:45 AM  Sudden Cardiac Death  
*Gregory Webster, MD*

10:45 AM – 11:45 AM  Congenital Heart Diseases  
*Sarah Thomas, MD*

11:45 AM – 12:15 PM  Cardiomyopathies  
*David Waters, MD*

12:15 PM – 1:15 PM  BREAK

1:15 PM – 1:30 PM  Infections  
*Lorenzo Gitto, MD*

1:30 PM – 1:45 PM  Cardiac Tumors  
*David Waters, MD*

1:45 PM – 2:00 PM  Trauma and Artifacts  
*Ponni Arunkumar, MD*

2:00 PM – 2:15 PM  Miscellaneous (Devices, Prosthetic Heart Valves, Myocardial Bridging, Cardiac Toxicity, etc.)  
*Lorenzo Gitto, MD; Sarah Thomas, MD; David Waters, MD*

2:15 PM – 3:15 PM  Heart Dissection: Traditional and Special Techniques  
*Lorenzo Gitto, MD; Sarah Thomas, MD; David Waters, MD*

3:15 PM – 3:25 PM  BREAK

3:25 PM – 4:25 PM  Cardiac Sampling and Histopathology  
*Lorenzo Gitto, MD; Sarah Thomas, MD*

4:25 PM – 4:45 PM  Genetic and Molecular Studies  
*Gregory Webster, MD*

4:45 PM – 5:00 PM  Discussion and Questions  
*All Speakers*

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

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

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
Forensic Aid
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

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

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

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 forensic science.

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

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

### Program:

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

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**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, Ultraviolet (UV), and IR energy. Common types of evidence requiring the use of ALS for visualization and imaging include semen, saliva, urine, gunshot and explosive residue, fluorescent fingerprint powders, hairs/fibers, inks utilized in fraudulent document cases, and other trace evidence. Attendees will learn how to utilize their cell phone cameras to scan evidence for traces of blood and Gunshot Residue (GSR). Attendees will also be exposed to utilizing ALS, including IR energy, to scan for subcutaneous bruising, obliterated tattoos, and obliterated writing with multiple inks.

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

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

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

**Co-Chair:**  
David Pauly, MFS  
Methodist University  
Fayetteville, NC

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

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

**Knowledge Level Required:** Basic

**Program:**

- **8:30 AM – 10:30 AM**  
  Overview of the Exposure Triangle  
  *David Pauly, MFS*

- **10:30 AM – 11:00 AM**  
  BREAK

- **11:00 AM – 12:00 PM**  
  Practical Exercise on Taking Various Crime Scene Images with Different Lenses—Normal Perspective, Wide Angle, Zoom, and Macro/Micro  
  *Steve Downs, DBA*

- **12:00 PM – 1:00 PM**  
  Exploration of Lighting Techniques  
  *Bryan W. Brendley, PhD; David Pauly, MFS; Steve Downs, DBA*

- **1:00 PM – 2:00 PM**  
  BREAK

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

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

Program cont.:

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Instructor(s)</th>
</tr>
</thead>
</table>
| 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 ILR and how to correctly interpret results from an LR analysis. They will also understand some of the challenges that must still be resolved before the LR can be used in a wide range of forensic disciplines.

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

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

Chair: Alicia L. Carriquiry, PhD
CSAFE–Iowa State University
Ames, IA

Co-Chair: 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 Motivating the Application of Quantitative Approaches to Evaluate Science
Michael J. Salyards, PhD

8:45 AM – 9:15 AM A Gentle Introduction to Basic Statistical Ideas: Conditional Probabilities, Bayes Rule, Statistical Models, and Examples
Alicia L. Carriquiry, PhD

9:15 AM – 10:00 AM Formulating Propositions and the Corresponding Likelihood Ratios: Examples from Biological and Trace Disciplines
Danica M. Ommen, PhD

10:00 AM – 10:15 AM BREAK

10:15 AM – 10:45 AM The Special Case of Pattern Comparison Disciplines and the Score-Based Likelihood Ratio (SLR)
Alicia L. Carriquiry, PhD

10:45 AM – 11:15 AM FRStats as an Example of SLR in Practice
Michael J. Salyards, PhD

11:15 AM – 11:45 AM The ENSFI Qualitative LR (QLR) and Other Odds and Ends
Danica M. Ommen, PhD

11:45 AM – 12:00 PM Discussion and Questions

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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

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

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

**Program:**

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

*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

**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**  
  *Introduction of Speakers and Overall Topic*  
  Carolyn Bayer-Broring, MFS; Elaine X. Wooton, MFS

- **1:15 PM – 2:00 PM**  
  *Security Substrates*  
  Carolyn Bayer-Broring, MFS

- **2:00 PM – 2:30 PM**  
  *Optically Variable Features*  
  Elaine X. Wooton, MFS

- **2:30 PM – 2:45 PM**  
  *BREAK*

- **2:45 PM – 3:30 PM**  
  *Security Printing*  
  Carolyn Bayer-Broring, MFS

- **3:30 PM – 4:00 PM**  
  *Digital Elements*  
  Elaine X. Wooton, MFS

- **4:00 PM – 4:30 PM**  
  *Design & Supply Chain Considerations*  
  Elaine X. Wooton, MFS

All times are in the U.S. Eastern Time Zone
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 suppose to be a “lower” bar than Frye. While we cannot predict the future under any modified Rule 702, we can certainly look to bolster our report writing in order to proactively minimize any potential negative impacts that could occur. This workshop will explore the potentials and provide recommendations for writing reports that will help stand the test of future Rule 702 scrutiny.

Chair:  
Thomas W. Vastrick, BSc  
Apopka, FL

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

Target Audience: Questioned Documents  
Knowledge Level Required: Basic

Program:

8:30 AM – 9:00 AM  Overview of Challenge  
Thomas W. Vastrick, BSc

9:00 AM – 10:00 AM  Recommendations and Bases  
Thomas W. Vastrick, BSc

10:00 AM – 10:20 AM  BREAK

10:20 AM – 12:00 PM  Writing the Report Principles  
Thomas W. Vastrick, BSc; Kevin P. Kulbacki, MSFS

12:00 PM – 12:30 PM  Discussion  
Thomas W. Vastrick, BSc; Kevin P. Kulbacki, MSFS

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

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

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

Presenters:
Mary C. McKiel, PhD
AAFS Standards Board
Arnold, MD

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

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

Raymond Valerio, JD
Queens District Attorney
Kew Gardens, NY

Co-Chair:
Pamela A.W. King, JD
State of Minnesota
Rochester, MN

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

Pamela Sale, BS
ANSI National Accreditation Board
Washington, DC

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

Stephanie Domitrovich, PhD
Senior Judge of Pennsylvania
Erie, PA

Target Audience: All Sections

Knowledge Level Required: Basic
## WORKSHOPS

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

**Program:**

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

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

Program:

1:30 PM – 1:40 PM  Introduction and Updates From the AAFS Opioids and Emerging Drugs Ad-hoc Committee
                     Agnes D. Winokur, MS

1:40 PM – 2:05 PM   Taking the Lab into the Field—Challenges and Tradeoffs for the Point of Use Testing
                     Barry K. Logan, PhD

2:05 PM – 2:35 PM   The Good, Bad, and the Ugly Regarding Standardized Workflows
                     Daniel T. Anderson, MS; Brianna Peterson, PhD

2:35 PM – 3:00 PM   How Are Opioids and Emerging Drugs Affecting Seized Drug Analysis Workflows
                     Reta Newman, MA

3:00 PM – 3:15 PM   BREAK

3:15 PM – 3:45 PM   The Pathology Perspective—Testing Complexities and Interpreting Results
                     James L. Caruso, MD

3:45 PM – 4:15 PM   Importance of Accurate Substance Data for Poison Control Center Case Management and Prevention Activities
                     Wendy B. Stephan, PhD

4:15 PM – 4:45 PM   Legal Questions Arising from Changes to Forensic Workflows Involving New Technologies
                     MJ Menendez, JD

4:45 PM – 5:00 PM   Questions and Answers
NATIONAL INSTITUTE OF JUSTICE

Forensic Science Research and Development Symposium

The National Institute of Justice (NIJ) Forensic Science Research and Development (R&D) Symposium is an open meeting 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/Z9ycS0LWOAb.

Tuesday, February 14, 2023

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

Dmitry Kurouski, 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

All times are in the U.S. Eastern Time Zone
**Session III – Seized Drugs and Toxicology**  
*Moderated by NIJ Program Manager, Frances Scott*

<table>
<thead>
<tr>
<th>Time</th>
<th>Duration</th>
<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:25 PM</td>
<td>1:50 PM</td>
<td>Detectability of Δ10-THC’s Chiral Analogs in Urine by Six Commercially Available Homogeneous Immunoassays</td>
<td>Carl E. Wolf, Virginia Commonwealth University</td>
</tr>
<tr>
<td>1:50 PM</td>
<td>2:15 PM</td>
<td>Assessment of the Contribution to Drug-Impaired Driving from Emerging and Undertested Drugs</td>
<td>Amanda L.A. Mohr, Center for Forensic Science Research and Education</td>
</tr>
<tr>
<td>2:15 PM</td>
<td>2:40 PM</td>
<td>A Molecular Networking Approach to Processing Untargeted High Resolution Mass Spectrometry Data in Forensic Toxicology</td>
<td>Heather Barkholtz, University of Wisconsin–Madison</td>
</tr>
<tr>
<td>2:40 PM</td>
<td>3:05 PM</td>
<td>High-Resolution Mass Spectrometry Screening in Forensic Toxicology: Cost Benefit Analysis</td>
<td>Sarah Kerrigan, Houston Forensic Science Center, Jessica Ayala, Sam Houston State University</td>
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<tr>
<td>3:05 PM</td>
<td>3:20 PM</td>
<td>Break</td>
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**Session IV – Forensic Biology/DNA**  
*Moderated by NIJ Program Manager, Tracey Johnson*

<table>
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<th>Time</th>
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<th>Title</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:20 PM</td>
<td>3:45 PM</td>
<td>Validation of a Confirmatory Proteomic Mass Spectrometry Body Fluid Assay for Use in Publicly Funded Forensic Laboratories</td>
<td>Erin Butler, New York City Office of the Chief Medical Examiner</td>
</tr>
<tr>
<td>3:45 PM</td>
<td>4:10 PM</td>
<td>Biological Sample Analysis Using Prediction Modeling for Early Mixture Detection</td>
<td>Tracey Dawson Green, Virginia Commonwealth University</td>
</tr>
<tr>
<td>4:10 PM</td>
<td>4:35 PM</td>
<td>DNA Analysis Findings from Male Sexual Assault Victims: Multidisciplinary Practice Implications</td>
<td>Julie L. Valentine, Brigham Young University</td>
</tr>
<tr>
<td>4:35 PM</td>
<td>5:00 PM</td>
<td>Selectively Analyzing and Interpreting DNA from Multiple Donors with a Full Single-cell Strategy</td>
<td>Nidhi Sheth, Rutgers University–Camden</td>
</tr>
</tbody>
</table>
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_
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 Δ9-THC and Δ9-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 Δ9-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
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. Ropero-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

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 AM</td>
<td>Input Session One</td>
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<tr>
<td>9:00 AM</td>
<td>Input Session Two</td>
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<td>10:00 AM</td>
<td>Input Session Three</td>
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<td>11:00 AM</td>
<td>Input Session Four</td>
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Forensic Sciences Research is an Open Access international, peer-reviewed journal publishing high-quality, original research and is an official journal of the Academy of Forensic Science (AFS).

Editors-in-Chief
Min Shen, Academy of Forensic Science, China
Duarte Nuno Vieira, University of Coimbra, Portugal

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American Academy of Forensic Sciences
75th Anniversary Conference

Science Works

February 13-18, 2023
Orlando, Florida
Rosen Shingle Creek Resort
### Wednesday

#### Poster Session

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
</table>
| 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 |

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

## Thursday

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

**Moderator: Krista Bennett**

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

**Moderator: Katharine Pope**<br>**Co-Moderator: Christopher Goden**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
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<tr>
<td>10:15 AM – 10:30 AM</td>
<td>A33</td>
<td><strong>To Scavenge or Not to Scavenge: Rethinking Patterns of Scavenging Behaviors in the Western United States</strong>&lt;br&gt;Cheyenne Collins, MA*&lt;br&gt;(FSF Emerging Forensic Scientist Award Oral Presentation)</td>
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<tr>
<td>10:30 AM – 10:45 AM</td>
<td>A34</td>
<td><strong>Scavenging in a Wetland Environment: Documentation of Vulture Scavenging of Fully and Partially Submerged Human Remains</strong>&lt;br&gt;Kelsee Hentschel-Fey, MA*; Tuesday Frasier, MS; Kara DiComo, BA; Gennifer Goad, MA</td>
</tr>
<tr>
<td>10:45 AM – 11:00 AM</td>
<td>A35</td>
<td><strong>Estimating Postmortem Submersion Interval: Implications for Varied Water Conditions and Skin Tones</strong>&lt;br&gt;Ibukunoluwa Olowe, MSc; Anna Williams, PhD*</td>
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*Presenting Author*
Presenting Author: Christine Bailey, MA; Autumn Lennartz, MA; Maggie Klemm, BS; Cameron Privette, BS; Carter Unger, BS; Rebecca George, PhD

ANTHROPOLOGY

11:00 AM – 11:15 AM A36 Assessing Patterns of Moisture Content in Decomposing, Desiccated, and Mummified Tissue in the Southeastern United States
Christine Bailey, MA*; Autumn Lennartz, MA; Maggie Klemm, BS; Cameron Privette, BS; Carter Unger, BS; Rebecca George, PhD

11:15 AM – 11:30 AM A37 The Metabolomics-Based Estimation of Postmortem Interval From Bones for Forensic Applications
Andrea Bonicelli, PhD*; Noemi Procopio, PhD

11:30 AM – 11:45 AM A38 The Impact of Fat Mass on Decomposition Rate and Postmortem Interval Estimation
Emma Giacomello, MA*; Michelle Hamilton, PhD
(FSF Emerging Forensic Scientist Award Oral Presentation)

11:45 AM – 1:00 PM BREAK

Trauma Assessment: Timing, Fractography, and Thermal Damage

Moderator: Veronica Keyes Co–Moderator: Lauren Pharr

1:00 PM – 1:15 PM A39 A Preliminary Investigation of Fractographic Method Accuracy in Determining Fracture Propagation Direction in Human Tibiae
Christopher Goden, MA*; Amanda Agnew, PhD; Yun-Seok Kang, PhD; Kyra Stull, PhD; Angela Harden, PhD

1:15 PM – 1:30 PM A40 An Examination of Strain Mode at Fracture in Experimentally Loaded Human Tibiae
Angela Harden, PhD*; Yun-Seok Kang, PhD; John Bolte, PhD; Kyra Stull, PhD; Amanda Agnew, PhD

1:30 PM – 1:45 PM A41 An Evaluation of Blunt Force Trauma Mechanism Interpretations Inferred From Skeletal Fracture Morphology and Patterning
Donna Boyd, PhD*; Victoria Pate

1:45 PM – 2:00 PM A42 The Application of Forensic Fractography to High-Velocity Projectile Trauma in Long Bones: Relationships to Velocity and Caliber
Devin Adcox, BS*; Ashley Kendell, PhD; Eric Bartelink, PhD; Hugh Berryman, PhD

2:00 PM – 2:15 PM A43 The Microscopic Characteristics of Peri- and Postmortem Fracture Surfaces
Jessica Skinner, PhD*; Natalie Langley, PhD; Yukha 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 A44 Distinguishing Between Peri- and Postmortem Fractures to Bone in the Sonoran Desert
Marlen Juarez Lopez, BS*; Kaitlyn Fulp, MA; Katelyn Bolhofner, PhD

2:30 PM – 2:45 PM A45 The Thermal Damage Analysis Resulting From a Controlled Burn
Rebecca George, PhD*; Nicholas Passalacqua, PhD; Darren Solomon, MS; David Schauble, MS

2:45 PM – 3:00 PM BREAK

*Presenting Author
ANTHROPOLOGY

Isotopes and Commingled Remains: Chemistry at Work in Forensic Anthropology

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

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

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 Sehrawat, 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)

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

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 MartÃí, PhD*; Oscar Ibáñez, PhD; Gennifer Goad, MA; Rubén 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

Moderator: Sharon Derrick  
Co–Moderator: Sophia Reck

8:45 AM – 9:00 AM  A79  WITHDRAWN

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

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

Carlos Sanchez-Muñoz, MSc; Pablo Mesejo, PhD*; Sergio Damas, PhD

10:00 AM – 10:15 AM  BREAK

*Presenting Author
## Aspects of the Biological Profile I: Estimating Age

**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**

## Aspects of the Biological Profile II: Sex Assessment

**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, PhDe*; 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**  
Raphaela 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

*Presenting Author
# Aspects of the Biological Profile III: Population Affinity

**Moderator:** Angela Harden  
**Co–Moderator:** Ashley Smith

### 2:30 PM – 2:45 PM

| Session | 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

| Session | 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

| Session | A97 | Biological Distance Assessment Using Matched Data From Two Geographically Proximate Samples in Latin America  
Kelly Kamnikar, PhD*

### 3:15 PM – 3:30 PM

Amanda Hale, MA*; Rebecca Wilson-Taylor, PhD; Alexander Christensen, PhD; Sydney Garcia, MA

### 3:30 PM – 4:00 PM

**BREAK**

# Aspects of the Biological Profile IV: Stature Estimation

**Moderator:** Natalie Lanley  
**Co–Moderator:** Isabel Melhado

### 4:00 PM – 4:15 PM

| Session | A100 | The Effective Use of Stature in Forensic Identification  
John Byrd, PhD*

### 4:15 PM – 4:30 PM

| Session | 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

| Session | 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

| Session | A103 | Investigating the Reliability and Validity of the Portable Osteometric Device  
Eric Anderson, MA*; Sierra Malis, MA; Molly Zuckerman, PhD; Anna Osterholtz, PhD

*Presenting Author*
| Poster Session | A99 | Exploring Macromorphoscopic Traits in Relation With Craniofacial Ratios  
Leah Auchter, MA*; Briana New, MA; Elaine Chu, MA; Louise Corron, PhD; Kyra Stull, PhD |
|  | 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 |
|  | 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* |
|  | A106 | The Impact of Age on Pair Matching Accuracy  
Megan Ingvoldstad, PhD*; Carrie LeGarde, MA; Andrea Palmiotto, PhD |
|  | A107 | WITHDRAWN |
|  | 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 |
|  | 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 |
|  | 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 |
|  | A111 | Isoscapes Around the World: Mapping International Forensic Stable Isotopes Research  
A. Skylar Joseph, MS*; Stephen Fonseca, BS |
|  | 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 |
|  | 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; Valéry Hédouin, MD, PhD |
|  | A114 | A New Method to Estimate Time Since Death Using Binary Observations and Random Forest Regression  
Michael Kenyhercz, PhD*; Giovanna Vidoli, PhD |
|  | A115 | Animal Scavenging of Human Skeletal Remains in Western North Carolina  
Maggie Klemm, BS* |
|  | A116 | Future Avenues in Research Standardization for Terrestrial Human Decomposition  
Hayden McKee-Zech, MSc*; Sarah Schwing, MA*; Erin Patrick, MSc |

*Presenting Author
ANTHROPOLOGY

11:30 AM – 1:30 PM  A117  Setting a Baseline: An Analysis of Florida's Forensic Institute for Research, Security, and Tactics (FIRST)
  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

*Presenting Author
CRIMINALISTICS

Wednesday

Poster Session

11:30 AM – 1:00 PM  B1  WITHDRAWN

11:30 AM – 1:00 PM  B2  WITHDRAWN

11:30 AM – 1:00 PM  B3  An Investigation of Trace DNA Samples From Objects Stolen in Pickpocket Scenarios
Tiffany Kreidler, BS*; Lauren Hoopes, BS; Bas Kokshoorn, PhD; Fabio Oldoni, PhD
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 AM – 1:00 PM  B4  The Optimized Recovery of DNA From Exhaled Breath Devices: From Drug Detection to Human Identification
Kayli Carrillo, BS*; Sheree Hughes, PhD

11:30 AM – 1:00 PM  B5  The Impact of 1,4-Dithiothreitol (DTT) on the Microbial Community Structures Associated With Human Semen Samples
Christian Blaise, MS; Denise Wohlfahrt, BS*; Tomasz Arodz, PhD; Sarah Seashols-Williams, PhD; Baneshwar Singh, PhD

11:30 AM – 1:00 PM  B6  Can We Predict DNA Shedding Propensity From Other Individual Characteristics?
Genesis Echavarria, BS*; Ines Cedillo, MS; Nicholas D.K. Petraco, PhD; Mechthild Prinz, PhD

11:30 AM – 1:00 PM  B7  The Multiple Reaction Monitoring Tandem Mass Spectrometry Approach: A Tool for Latent Stains of Biological Fluids Identification in Forensic Sciences Laboratory
Aldo Di Nunzio, MS*; Anna Illiano, MS; Chiara Melchiorre, MS; Gabriella Pinto, MS; Ciro Di Nunzio, BS*; Nadia Tinto, MD; Francesco Sesso, MS, PhD; Massimiliano Esposito, MD; Piero Pucci, MS; Angela Amoresano, MS

11:30 AM – 1:00 PM  B8  The Enhanced Collection and Recovery of Touch DNA Samples From Challenging Surfaces Using A Venturi Vacuum Device (VVD) Across Two Forensic DNA Workflows
Joseph Rahm, BS*; Charday Ward, BS; DeEtta Mills, PhD

11:30 AM – 1:00 PM  B9  Touch DNA: An Evaluation of a Novel Collection Method
Jamie Fredericks, PhD*; Hannah Varner, BSc

11:30 AM – 1:00 PM  B10  Exploring Target Areas for Recovering Informative DNA Profiles From Eyeglasses
Isabel Melhado, BS*; Krista Latham, PhD; Cynthia Cale, MS; Alex Wong, BA*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 AM – 1:00 PM  B11  The DNA Transfer to Bedsheets in Differing Cohabitation Environments
Jordan Roberson, BA*; Olivia Messenger, BA*; Krista Latham, PhD; Cynthia Cale, MS

11:30 AM – 1:00 PM  B12  Morphological and Autofluorescence Signatures for the Identification of Vaginal Cells in Mixture Samples Containing Saliva and/or Epidermal Cells
Hannah Burden, BS*; Arianna DeCorte, MS; Sarah Ingram, PhD; Christopher Ehrhardt, PhD

11:30 AM – 1:00 PM  B13  The Application of an Improved Processing Method of Touch DNA Samples
Deborah Soares Bispo Santos Silva, PhD; Hannah Calista; Caitlyn Martinez; Ryan Smith, PhD; Georgiana Gibson-Daw, PhD*

*Presenting Author
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B14</td>
<td>Trace DNA: Recovery Efficiency From Patrimonial Crimes in the Brazilian Federal Police</td>
<td>Camila Maciel, BS; Bruno Trindade, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B15</td>
<td>Improving the Analysis of Forensic Samples Using a Microwave Treatment and Rapid, Direct Polymerase Chain Reaction (PCR)</td>
<td>Fabiana Taglia, PhD*; Nicole Fernandez-Tejero, MS; Casandra Setser, PhD; Ling Wang, PhD; Kevin Lothridge, MS; Bruce McCord, PhD; Steven Lee, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B16</td>
<td>Finding the DNA: How Much Was Recovered and Where Did the Rest Go?</td>
<td>Kyra Uramoto, MS*; Robin Cotton, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B17</td>
<td>Using Exact Likelihood Ratio (LR) Distributions for Probabilistic Genotyping Software Validation</td>
<td>Mark Perlin, PhD, MD*; Jennifer Hornyak Bracamontes, MS; Erin Estus, MS</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B18</td>
<td>The Algorithm Performance on a Firearm Examiner Black Study</td>
<td>Eric Law, PhD*; Makia Maxey*; Keith Morris, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B19</td>
<td>An Assessment of a Novel Method for Physical Fit Examinations Using an Extensive Database of Casework-Like Samples and Interlaboratory Studies</td>
<td>Zachary Andrews, MS*; Meghan Prusinowski, MS; Tatiana Trejos, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B20</td>
<td>A Case Report: Identification of AP-238 and 2-Fluorodeschloroketamine in Internet-Available Powder Samples</td>
<td>Karissa Resnik, MS; Justin Poklis, BS; Michelle Peace, PhD; Frederick Moeller, MD; Emanuele Alves, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B21</td>
<td>The Evaluation of Three Derivatization Reagents for the Identification of Eight Aminoindanes by Gas Chromatography/Mass Spectrometry (GC/MS)</td>
<td>Thomas Brettell, PhD*; Amber Rose, MS; Monica Joshi, PhD; Matthew Wood, PhD; Marianne Staretz, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B22</td>
<td>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)</td>
<td>Alexis Pollard, BS*; J. Tyler Davidson, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B23</td>
<td>Multiple Micro-Abrasions on the Shooter’s Hand and the Recharge of Ammunition at Home</td>
<td>Benedetta Pia De Luca, MD*; Alessandra Stellacci, MD; Luigi Buongiorno, MD; Pierluigi Caricato, MD; Carlo Angeletti, MD; Fortunato Pittito, MD; Maricla Marrone, MD; Giuseppe Strisciullo, BES; Francesco Vinci, MD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B24</td>
<td>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</td>
<td>Brendan Minick*; Kenyon Evans-Nguyen, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B25</td>
<td>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</td>
<td>William Feeney, PhD*; Arun Moorthy, PhD; Edward Sisco, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B26</td>
<td>Statistical Discrimination Methods for Forensic Source Interpretation: The Application to Micromorphometric Feature Measurement of Aluminum Powders Used in Explosives</td>
<td>Danica Ommen, PhD*; Christopher Saunders, PhD; JoAnn Buscaglia, PhD*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B27</td>
<td>A Survey of Mounting Media Used for Hair and Fiber Microscopy</td>
<td>Maria Lawas, MS; Linda Otterstatter, BS; Joshua Friedman, MS; Joseph Donfack, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B28</td>
<td>The Application of Surface-Enhanced Raman Spectroscopy (SERS) for the Detection of Synthetic Cathinones</td>
<td>Mario Vendrell-Dones, MS*; Bruce McCord, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B29</td>
<td>The Unique Capability of Direct Analysis in Real-Time Mass Spectrometry (DART®-MS) for the Detection of Less Volatile Components in Ignitable Liquids</td>
<td>Shruthi Perna, MS*; Briza Marie Dedicatoria, BS; Ngee Sing Chong, PhD; Mengliang Zhang, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B30</td>
<td>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</td>
<td>Fantasia Whaley, PhD*; Laurny DeGreeff, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B31</td>
<td>An Assessment of Field-Portable Instrumentation for Pre-Blast Explosives Detection</td>
<td>Makenzie Kuehn, BS*; J. Tyler Davidsonson, PhD; Geraldine Monjardez, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B32</td>
<td>Dating Crime Evidence With Microbes: The Ideal Forensic Clock?</td>
<td>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</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B33</td>
<td>The Development of a Self-Assembled Gold Nanoparticle Thin Film to Support Field Detection of Trace Chemicals</td>
<td>Taylor Parmer, BS*; Geraldine Monjardez, PhD; Jorn (Chi-Chung) Yu, PhD; Sarah Stewart, MS</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B34</td>
<td>An Analysis of Polymer-Coated Bullets Using Spectroscopic Methods</td>
<td>Liana Albano, BS*; Peter Diaczuk, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B35</td>
<td>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)</td>
<td>Alleigh Couch, BS*; Jayleigh Lanza, BS; Christopher Zall, PhD; J. Tyler Davidsonson, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B36</td>
<td>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</td>
<td>Morgan Carpenter, BS*; Jared Estevanes, BS; Patrick Buzzini, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B37</td>
<td>Tool Mark Matching Using 3D Structures</td>
<td>Nam-Kyu Park, PhD*; Hoyong Yie, ME; Young-II Seo, MS</td>
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</tbody>
</table>

*Presenting Author
**Thursday—Session I**

**The Past, Present, and Future**

**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**

**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**  
  **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**

*Presenting Author*
CRIMINALISTICS

Probabilistic Genotyping

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 Arichava 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

Trace DNA and Mixtures

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 Grnicak, 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 Moroese, 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

*Presenting Author
# Standard Development and Related Activities Strengthening Forensic Science

**Moderator:** Beth Saucier Goodspeed  
**Co–Moderator:** Jason Bory

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 AM – 8:45 AM</td>
<td>B60</td>
<td>Standards Development Activities in Firearm and Toolmark Examination</td>
<td>Robert Sanger, JD*</td>
</tr>
<tr>
<td>8:45 AM – 9:00 AM</td>
<td>B61</td>
<td>Standards Development Activities in Trace Materials</td>
<td>Celeste Grover, MSFS*</td>
</tr>
<tr>
<td>9:00 AM – 9:15 AM</td>
<td>B62</td>
<td>Standards Development Activities Related to Ignitable Liquids, Explosives, and Gunshot Residue</td>
<td>Brenda Christy, MS*</td>
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<tr>
<td>9:15 AM – 9:30 AM</td>
<td>B63</td>
<td>Standards Development Activities Related to the Examination of Friction Ridge Detail</td>
<td>Heidi Eldridge, PhD*</td>
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<tr>
<td>9:30 AM – 9:45 AM</td>
<td>B64</td>
<td>Current and Future Standards Development Activities in Seized Drugs</td>
<td>Agnes Winokur, MS*</td>
</tr>
<tr>
<td>9:45 AM – 10:00 AM</td>
<td>B65</td>
<td>The Development of a Standard Guide for the Use of X-Ray Diffraction in the Forensic Examination of Geological Materials</td>
<td>Libby Stern, PhD*; Ian Saginor, PhD; Alastair Ruffell, PhD</td>
</tr>
<tr>
<td>10:00 AM – 10:15 AM</td>
<td>B66</td>
<td>Seized Drugs Process Map</td>
<td>David Gouldthorpe, MS*; Melissa Taylor, BA; Heather Waltke, MFS, MPH</td>
</tr>
<tr>
<td>10:15 AM – 10:30 AM</td>
<td>B67</td>
<td>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)</td>
<td>Khushi Patel; Melissa Scheible, MFS; Kelly Meiklejohn, PhD*</td>
</tr>
<tr>
<td>10:30 AM – 10:45 AM</td>
<td>B68</td>
<td>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</td>
<td>Joseph DiZinno, DDS*</td>
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<td>10:45 AM – 11:00 AM</td>
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<td><strong>BREAK</strong></td>
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## Forensic Science Principles—A Closer Look at the Sydney Declaration

**Moderator:** Patrick Buzzini  
**Co–Moderator:** Michelle Miranda

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<th>Time</th>
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<th>Title</th>
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<tbody>
<tr>
<td>11:00 AM – 11:15 AM</td>
<td>B69</td>
<td>Revisiting the Essence of Forensic Science: The Sydney Declaration Coming of Age?</td>
<td>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</td>
</tr>
<tr>
<td>11:15 AM – 11:30 AM</td>
<td>B70</td>
<td>The Sydney Declaration: Should We Care About Forensic Science Principles?</td>
<td>Claude Roux, PhD*; Rebecca Bucht, PhD; Patrick Buzzini, PhD; Frank Crispino, PhD; Olivier Ribaux, PhD</td>
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*Presenting Author
CRIMINALISTICS

11:30 AM – 11:45 AM  B71  An Exercise in Scientific Problem Solving
Peter De Forest, D.Crim; Michelle Miranda, PhD; Patrick Buzzini, PhD*; Sheila Willis, PhD

11:45 AM – 12:00 PM  B72  Ficta Vivos Docent: Learning From Detective Fiction
Michelle Miranda, PhD*; Peter De Forest, D.Crim

12:00 PM – 1:00 PM  BREAK

Fire Debris, Explosives, and Firearms

Moderator: Rita Newman  Co-Moderator: Brenda Christy

1:00 PM – 1:15 PM  B73  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
Monica Joshi, PhD*; Blake Kerstetter, BS; Kirk Lokits, MS, PhD

1:15 PM – 1:30 PM  B74  Assessing the Evidentiary Value in Fire Debris Analysis: A Proposed Workflow
Frances Whitehead, MS; BS*; Michael Sigman, PhD; Mary Williams, MS

1:30 PM – 1:45 PM  B75  The Detection of Gasoline in Fire Debris Using Artificial Intelligence: Image Transformation of Gas Chromatography and Mass Spectrometry Data and Deep Learning
Ting-Yu Huang, MSc*; Jorn (Chi-Chung) Yu, PhD

1:45 PM – 2:00 PM  B76  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
Briana Capistran, PhD*; Matthew Staymates, MS; Edward Sisco, PhD

2:00 PM – 2:15 PM  B77  Population Statistics and a Reference Population Database of Firearm Toolmarks
Xiaoyu Zheng, MS*; Johannes Soons, PhD; Erich Smith, MS; Martin Baiker-Sørensen, PhD

2:15 PM – 2:30 PM  B78  Reporting Likelihood Ratio (LR) for Case Work in Firearm Evidence Identification
John Song, PhD*

2:30 PM – 2:45 PM  B79  The Role of Adsorption on the Detectability of Contained Explosives and Drugs
Emma Calabrese, BS*; Lauryn DeGreeff, PhD

2:45 PM – 3:00 PM  B80  The Combined Solid Phase Extraction Procedure for the Analysis of Organic and Inorganic Explosives Residue
Courtney Cruse, PhD*; Amara Borchers, BS; Kristen Fowble, PhD; David Pavone, MFS; Jennifer Thomas, PhD; Stephanie Armas, MS; Mark Miller, PhD; Sarah Sipe, PhD

3:00 PM – 3:15 PM  B81  The Statistical Characterization of the Discriminating Power of Trace Elemental Concentrations of Aluminum Foils Used in Improvised Explosive Devices
Anjuli Bhandari, PhD*; Michelle Jordan, PhD; Danica Ommen, PhD; Christopher Saunders, PhD; JoAnn Buscaglia, PhD

3:15 PM – 3:30 PM  B82  Gunshot Suicides Caused by Cane-Gun and Alarm Garden Gun Cannon: Two Case Reports
Lea-Helena Rossi, MD*; Nathalie Jousset, MD; Stephane Malbranque, MD

3:30 PM – 3:45 PM  BREAK
**CRIMINALISTICS**

**Drugs I**

**Moderator: DeMia Pressley**  
**Co–Moderator: Mariel Candelario-Gorbea**

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<tr>
<th>Time</th>
<th>Presentation ID</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>3:45 PM – 4:00 PM</td>
<td>B83</td>
<td>The Application of the Expert Algorithm for Substance Identification (EASI) on Synthetic Cathinones Using Mass Spectrometry (MS)</td>
<td>Glen Jackson, PhD*; Alexandra Adeoye, MS; Jessica Orris, BS; Stephen Hokanson, BS</td>
</tr>
<tr>
<td>4:00 PM – 4:15 PM</td>
<td>B84</td>
<td>The Application of the Expert Algorithm for Substance Identification (EASI) to the Mass Spectral Identification of Fentanyl Analogs</td>
<td>Alexandra Adeoye, MS*; Glen Jackson, PhD</td>
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<tr>
<td>4:15 PM – 4:30 PM</td>
<td>B85</td>
<td>The Development and Validation of a Quantitative Method for the Analysis of Fentanyl Containing “Dope” Samples</td>
<td>Joshua DeBord, PhD*; Jennifer Shinefeld, MS; Barry Logan, PhD; Alex Krotulski, PhD</td>
</tr>
<tr>
<td>4:30 PM – 4:45 PM</td>
<td>B86</td>
<td>Distinguishing Piperazine and 12 Analogs Using Raman Microspectroscopy and Chemometrics</td>
<td>Brianna Zettlemoyer, BS*; Thomas Brettell, PhD; Monica Joshi, PhD; Lawrence Quarino, PhD</td>
</tr>
<tr>
<td>4:45 PM – 5:00 PM</td>
<td>B87</td>
<td>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</td>
<td>Janet Crespo Cajigas, MS*; Howard Holness, PhD; Lauryn DeGreeff, PhD; Kenneth Furton, PhD</td>
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<tr>
<td>5:00 PM – 5:15 PM</td>
<td>B88</td>
<td>The Development and Validation of a Method for the Differentiation of Hemp and Marijuana by Gas Chromatography/Mass Spectrometry (GC/MS)</td>
<td>Sarah Shuda, MSFS*; Joshua Folger, BS; Barry Logan, PhD</td>
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**Poster Session**

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<th>Time</th>
<th>Presentation ID</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B89</td>
<td>The Commercialization of a Universal Method for Body Fluid Identification for Forensic Purposes</td>
<td>Alexis Weber, MS*; Igor Ledney, PhD</td>
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<td>(FSF Emerging Forensic Scientist Award Poster Presentation)</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B90</td>
<td>The Evaluation of Demineralization Parameters for DNA Extraction Methods From Skeletal Remains</td>
<td>Jennifer Snedeker, BS*; Erin Gorden, MFS; Gina Parada, MSFS; Christina Neal, MS; Carmen Reedy, PhD; Rachel Houston, PhD</td>
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<td></td>
<td>(FSF Emerging Forensic Scientist Award Poster Presentation)</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B91</td>
<td>Improving Allele Call Rates for Challenging Samples With ePCR1 Buffer</td>
<td>Brooke Ouwerkerk, BTech, BSc*; Georgina Lush, BS; Renee Leduc, PhD; Steen Hartsen, MBA, BSc, BTech; Jason Moore, MA, BSc</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B92</td>
<td>The Differentiation of Cannabis Sativa Crop Type and Biogeographical Origin Using Nine Novel Chloroplast Single Nucleotide Polymorphism (SNP) Markers</td>
<td>Michele Di Nunzio, MSc*; Carme Barrot-Feixat, PhD; David Gangitano, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>B93</td>
<td>Maximum DNA Recovery From Cold Case Victims Using Ancient and Forensic DNA Extraction Methods</td>
<td>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</td>
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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; Gotham 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*; Shereeh 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

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<tr>
<td>11:30 AM</td>
<td>B108</td>
<td>Trace Metal Profiling of Polymer Filaments Used in 3D Printing</td>
<td>Thomas Gluodenis, PhD; John Stallworth*</td>
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<tr>
<td>11:30 AM</td>
<td>B109</td>
<td>The Elemental Analysis of Recently Manufactured Automotive Glasses and a Comparison of Data Processing Programs</td>
<td>Seongshin Gwak, PhD*; Dongye Lee, PhD; Kiwook Kim, MS; Sangcheol Heo, MS; Seung-jin Ryu, PhD; Hyun Jee Kim, PhD</td>
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<tr>
<td>11:30 AM</td>
<td>B110</td>
<td>WITHDRAWN</td>
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<tr>
<td>11:30 AM</td>
<td>B111</td>
<td>The Forensic Analysis of 3D-Printed Polymers Using Direct Analysis in Real-Time Mass Spectrometry (DART*-MS)</td>
<td>Jenna Covey, MSFS*; Brian Musselman, PhD; Maria-Isabel Carnasciali, PhD; Brooke Kammrath, PhD</td>
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<td>11:30 AM</td>
<td>B112</td>
<td>Improving the Delta-9-Tetrahydrocannabinol (delta-9-THC) Quantitative Measurements in Forensic Laboratories by The National Institute of Standards and Technology (NIST) CannaQAP</td>
<td>Walter Wilson, PhD*; Andrea Yarberry, PhD; Jerome Mulloor, MS</td>
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<td>11:30 AM</td>
<td>B113</td>
<td>The Investigation and Quantitation Using Ultraviolet/Visible (UV/Vis) Spectrophotometry of the Products of the 4-Aminophenol Reaction With Cannabinoids</td>
<td>Juliet Pearsall, BS*; Marianne Staretz, PhD; Matthew Wood, PhD; Jeanne Berk, PhD</td>
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<td>11:30 AM</td>
<td>B114</td>
<td>An Investigation of Organic Gunshot Residues by Direct Analysis in Real-Time Mass Spectrometry (DART*-MS)</td>
<td>Thomas Ledergerber, BS*; William Feeney, PhD; Edward Sisco, PhD; Luis Arroyo, PhD; Tatiana Trejos, PhD</td>
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<td>11:30 AM</td>
<td>B115</td>
<td>A Mass Spectral Interpretation of Pinaca-Type Novel Psychoactive Substances (NPS)</td>
<td>Christopher Poulos, BS*; Glen Jackson, PhD</td>
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<td>11:30 AM</td>
<td>B116</td>
<td>The Application of the Expert Algorithm for Substance Identification (EASI) on N-Alkanes</td>
<td>Alexander Pfeffer, BS*; Alexandra Adeoye, MS; Glen Jackson, PhD</td>
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<td>11:30 AM</td>
<td>B117</td>
<td>The Influence of Instrument Parameters on Replicate Mass Spectra and Spectral Comparison Algorithms</td>
<td>Isabel Galvez Valencia, BS*; Glen Jackson, PhD</td>
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<tr>
<td>11:30 AM</td>
<td>B118</td>
<td>Boar Hunt or Manhunt? Fatality During Boar Hunting Expedition</td>
<td>Andrea Costantino, MD*; Naomi Iacoponi, MD*; Julia Lazzari, MD; Alice Chiara Manetti, MD; Valentina Bugelli, MD, PhD; Paride Minervini; Marco Di Paolo, MD</td>
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<td>11:30 AM</td>
<td>B119</td>
<td>The Quantitative Analysis of Δ9-Tetrahydrocannabinol (Δ9-THC) in Cannabis Plants Using the Fast Blue BB Colorimetric Test</td>
<td>Nicole Valdes, MS*; Roberta Gorziza, PhD; Jose Almirall, PhD</td>
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<td>11:30 AM</td>
<td>B120</td>
<td>Open Fire</td>
<td>Abigail Wilson, BS*; Peter Diaczuk, PhD</td>
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<td>11:30 AM</td>
<td>B121</td>
<td>Accounting for Household Substrates in a Model for Predicting the Weathering of Ignitable Liquids</td>
<td>Max Denn, MS, BS*; Glen Jackson, PhD</td>
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CRIMINALISTICS

11:30 AM – 1:00 PM  B122  The Qualitative Identification of Delta-8-Tetrahydrocannabinol (delta-8-THC) and Delta-9-Tetrahydrocannabinol (delta-9-THC) Using Thin-Layer Chromatography (TLC)
Sara Moreno, BS*; Emily Kell, BS; Kimberly Burrow, BS; Lauren Richards-Waugh, PhD

11:30 AM – 1:00 PM  B123  WITHDRAWN

11:30 AM – 1:00 PM  B124  The Raman Spectroscopic Analysis of Drugs in Contaminated Fingermarks: The Effect of Temperature and Time Since Deposition
Mohamed Amin, MSc*; Entesar Al-Hetlani, PhD; Igor Lednev, PhD

11:30 AM – 1:00 PM  B125  The Tools, Resources, and Collaborative Research Used to Address Seized Drugs Measurement Challenges
Edward Sisco, PhD*

Friday—Session I

Next Generation Sequencing

Moderator: Sheree Hughes  Co–Moderator: Charla Marshall

9:00 AM – 9:15 AM  B126  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
Mandi Van Buren, MPharm*; Brooke Ramirez, BS

9:15 AM – 9:30 AM  B127  The Internal Validation of Verogen ForenSeq™ DNA Signature Prep Kit Primer Set B Using the Hamilton Nimbus HD and MiSeq® FGx
Mandi Van Buren, MPharm*; Brooke Ramirez, BS

9:30 AM – 9:45 AM  B128  The Evaluation of the ForenSeq™ MainstAY Kit for Mixed Forensic DNA Samples
Damani Johnson, BS*; Lucio Avellaneda, BS; Rachel Houston, PhD; Tim Kalafut, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)

9:45 AM – 10:00 AM  B129  The Identification of Trends of Sequenced-Based Allelic Drop-Out in Autosomal Short Tandem Repeats (STRs)
Megan Foley, MSFS*; Gerwald Koehler, PhD; Jun Fu, PhD; Robert Allen, PhD; Jarrad Wagner, PhD

10:00 AM – 10:15 AM  B130  WITHDRAWN

10:15 AM – 10:30 AM  B131  Mitochondrial Genome Sequences From 6,025 Population Samples
Charla Marshall, PhD*; Kimberly Andreaggi, PhD; Jennifer Higginbotham, MFS; Elise Anderson, MSFS; Walther Parson, PhD

10:30 AM – 10:45 AM  B132  Perceptions of Forensic Scientists on Statistical Models and Ethical Implications in DNA Evidence Evaluations Using Sequence Data
Sanne Aalbers, MSc*; Bruce Weir, PhD

10:45 AM – 11:00 AM  BREAK

*Presenting Author
# CRIMINALISTICS

## Forensic Genetic Genealogy

**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**

## Challenging and Non-Human Samples

**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*; *Elaine Lewis, PhD; Daniele Podini, PhD; Arely Parra López, BS*

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*

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**

*Presenting Author*
CRIMINALISTICS

In the Lab and in the Field

**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 Squazzi, MA*; *Giulia Giappichini, MS*; *Chiara Cirioni, MS*; *Selena Cisana, PhD*; *Luciano Garofano, PhD*; *Paolo Garofano, MD, PhD*; *Pasquale Linarello*; *Monica Omedei, PhD*; *Luca Salvadori, 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, BSc*; *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*

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**Friday—Session II**

**Drugs II**

**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*

*Presenting Author
CRIMINALISTICS

  John Wang, PhD*; Rong Zhang, PhD

9:30 AM – 9:45 AM  B155  A Quantitative Determination of Four Designer Benzodiazepines by High-Performance Thin-Layer Chromatography (HPTLC)
  Isabella Iorio, BS*; Thomas Brettell, PhD; Marianne Staretz, PhD; Matthew Wood, PhD

9:45 AM – 10:00 AM  B156  The Separation of Lysergic Acid Diethylamide (LSD) and its Analogs by High-Performance Thin-Layer Chromatography (HPTLC)
  Tori Schaffer, BS*; Sandra Rodriguez-Cruz, PhD; Jeanne Berk, PhD; Thomas Brettell, PhD

10:00 AM – 10:15 AM  B157  The Conversion of Cannabidiol to Delta-9-Tetrahydrocannabinol (delta-9-THC) During Gas Chromatography/Mass Spectrometry (GC/MS) Analysis
  Sarah Shuda, MSFS*; Barry Logan, PhD

10:15 AM – 10:30 AM  B158  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
  Volda Appia-Kusi, BS*; Ira Lurie, PhD

10:30 AM – 10:45 AM  B159  The Evaluation of Fentanyl and Fentanyl-Related Compounds on United States Paper Currency
  Matthew Hewes, MS*; Alex Krotulski, PhD; Donna Papsun, MS; Barry Logan, PhD

10:45 AM – 11:00 AM  BREAK

Canines and Guns

Moderator: Ann Geisendorfer  Co–Moderator: Carolyn Hudson

11:00 AM – 11:15 AM  B160  The Chemical Analysis of the Surface Building Collapse Samples: Updating Decontamination Protocols for Search and Rescue Canines
  Michelle Karpinsky, BS*; Lauryn DeGreeff, PhD; Erin Perry, MS, PhD

11:15 AM – 11:30 AM  B161  The Development of a Safe Canine Training Aid Mimic for Fentanyl
  Leann Forte, MS*; Howard Holness, PhD; Kenneth Furton, PhD; Lauryn DeGreeff, PhD

11:30 AM – 11:45 AM  B162  A Two-Step Method for the Identification and Highly Specific Analysis of Organic Gunshot Residue Using Raman and Laser-Induced Breakdown Spectroscopies
  Igor Lednev, PhD*; Shelby Khandasammy, BS; Lenka Halamkova, PhD; Matthieu Baudelet, PhD

11:45 AM – 12:00 PM  B163  Sourcing Glass Traces on Bullets as Additional Evidence for Shooting Reconstruction
  Crystal Rosales, BS*; Gwyneth Gordon, PhD; Kyle Mueller, MS; Maia Nguyen, MPS; Shirly Montero, PhD

12:00 PM – 1:00 PM  BREAK

*Presenting Author
CRIMINALISTICS

Friction Ridge

**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  
Hayong 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

**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, PhDC*; 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

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
**Thursday**

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

**Moderator: J. Levi White**

**Co–Moderator: Umit Karbiyik**

<table>
<thead>
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<td>8:30 AM – 8:50 AM</td>
<td>C1</td>
<td>A Lossy Compression Analysis of GoPro® Audios Before and After YouTube Laundry</td>
<td>Stephen Wells, MSc*; Catalin Grigoras, PhD; Gregory Wales, MSc; Cole Whitecotton, MSc</td>
</tr>
<tr>
<td>8:50 AM – 9:10 AM</td>
<td>C2</td>
<td>Can You Accurately Determine Clothing Tones in Infrared Closed-Circuit Television (CCTV) Imagery?</td>
<td>Cole Whitecotton, MSc; Gretchen Lomboy, MS*; James Zjalic, MSc</td>
</tr>
<tr>
<td>9:10 AM – 9:30 AM</td>
<td>C3</td>
<td>Digital Reality: Light Reflection vs. Gunfire Muzzle Flashes</td>
<td>Barry Dickey*; Gil Sapir, JD, MSc</td>
</tr>
<tr>
<td>9:30 AM – 9:50 AM</td>
<td>C4</td>
<td>An Investigation of Closed-Circuit Television (CCTV) Footage for the Detection of Facial Features</td>
<td>Lovepreet Kaur, MSc*; Mukesh Thakar, PhD; Navdeep Goel, PhD</td>
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<td>9:50 AM – 10:00 AM</td>
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**It Wasn’t Me! I Swear, I Didn’t Know!—Identification, Verification, and Age Estimation**

**Moderator: Patrick Eller**

**Co–Moderator: Irfan Ahmed**

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

No More Secrets—Social Networking and Mobile Device Analysis

**Moderator:** Alexander Nelson  
**Co–Moderator:** Gregory Wales

1:00 PM – 1:20 PM  
**C10**  
A Forensic Analysis of Android™-Popular Social Networking Apps  
*Chen Shi, PhD*; *Yong Guan, PhD*

1:20 PM – 1:40 PM  
**C11**  
TikTok From an Open-Source Intelligence (OSINT) Perspective: Lessons Learned  
*Marcus Rogers, PhD*; *Nina Matulis, BS*

1:40 PM – 2:05 PM  
**C12**  
The Analysis of Sysdiagnose in iOS® 15 to Identify the Sending Phone Number of Airdrop Data  
*Brandon Epstein, MS*; *Benjamin Klein, BA*; *Derek Feuerstein, BS*;

2:05 PM – 2:25 PM  
**C13**  
Cyber Forensic Investigations of Web3 Cryptocurrency Wallets on iOS® and Android™  
*Mohammad Meraj Mirza, MS*; *Akif Ozer*; *Ummit Karabiyik, PhD*

2:25 PM – 2:35 PM  
**BREAK**

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

**Moderator:** Andrew Crouse  
**Co–Moderator:** Mary Adedayo

2:35 PM – 2:55 PM  
**C14**  
Cryptographic Techniques in Digital Forensics  
*Taiwo Ogunseyi, PhD*; *Oluwasola Adedayo, PhD*

2:55 PM – 3:20 PM  
**C15**  
Leveraging Memory Forensics Artifacts for Android™ Malware Classification  
*Aisha Ali-Gombe, PhD*; *Sneha Sudhakaran, PhD*; *Golden Richard, PhD*

3:20 PM – 3:45 PM  
**C16**  
Going Beyond Forensics With Virtual Private Network (VPN) Application Fingerprinting  
*Shinelle Hutchinson*; *Blake Anderson, PhD*; *Ummit Karabiyik, PhD*; *David McGrew, PhD*

3:45 PM – 4:05 PM  
**C17**  
Unlocking the Audit Trail of an Unsupported Programmable Deadbolt Lock  
*Nicole Odom, MSFS*

4:05 PM – 4:45 PM  
**C18**  
WITHDRAWN

Poster Session

11:30 AM – 1:00 PM  
**C19**  
Facial Recognition Searches Using Postmortem Images  
*Ella Uren, BS*; *Kelcy McArthur, MA*; *Krystal Howard, MSW*; *Jennifer Coulson, BA*; *Jane Harris, PhD*

11:30 AM – 1:00 PM  
**C20**  
A Likelihood Ratio Approach for Detecting Behavioral Changes in Device Usage Over Time  
*Rachel Longjohn, MS*; *Padhraic Smyth, PhD*

11:30 AM – 1:00 PM  
**C21**  
Artificial Intelligence Technologies in Age Estimation: The State-of-the-Art  
*Salvatore Rocuzzo, MD*; *Aldo Libertà, MD*; *Elisa Pappalardo, MD*; *Sabrina Franco, MD*; *Mario Chisari, MD*; *Massimiliano Esposito, MD*
And Boom Goes the (Dynamite) Data Explosion—Data Sets, Databases, and Forensic Tool Testing

Moderator: Jason Lewis
Co–Moderator: Cole Whitecotton

8:45 AM – 9:05 AM  C22  Computer Forensics Reference Data Sets (CFReDS) for Digital Evidence
   Rick Ayers, MS; Mehdi Shahid, MS; Barbara Guttman, BA*

9:05 AM – 9:25 AM  C23  The Discovery of Digital Forensic Dataset Characteristics With CASE-Corpora
   Alex Nelson, PhD*; Eoghan Casey, PhD

9:25 AM – 9:45 AM  C24  Manipulating the National Institute of Standards and Technology (NIST) National Software Reference Library SQLite Metadata Sets
   Douglas White, MS*; Austin Snelick, BS*

   James Lyle, PhD*; Richard Ayers, MS; Barbara Guttman, BA

10:10 AM – 10:20 AM  BREAK

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

Moderator: Thomas Moore
Co–Moderator: Gary Daniel

10:20 AM – 10:40 AM  C26  Standards Development Activities in Digital and Multimedia Forensic Sciences
   Tracy Walraven, MFS*

10:40 AM – 11:00 AM  C27  Escaping the Monolithic Architecture for Digital Forensics and Incident Response Systems Using a Microservices Approach
   Mohammad Meraj Mirza, MS*; Rwitam Bandyopadhyay, BS; Akif Ozer; Bharath Vemula, MS; Umit Karabiyik, PhD*; Marcus Rogers, PhD*

11:00 AM – 11:25 AM  C28  Disambiguating “Ground Truth” for Forensic Applications in Artificial Intelligence
   Cristina Aggazzotti, PhD*; E. Allyn Smith, PhD*

11:25 AM – 11:45 AM  C29  Comparing Defense Attorneys’ and Prosecutors’ Knowledge of Digital Evidence
   Danielle Crimmins, PhD*; Kathryn Seigfried-Spellar, PhD; Marcus Rogers, PhD

11:45 AM – 1:05 PM  BREAK

*Presenting Author
# DIGITAL & MULTIMEDIA SCIENCES

## 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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<td>D40</td>
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<td>Mario Villar, BS; Andrea Valsecchi, PhD*; Pablo Mesejo, PhD</td>
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*Presenting Author*
**Wednesday**

**Poster Session**

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**

*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  
*Daniela Orozco Ramelli, DO*; *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 Scoi, 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*

*Presenting Author*
ENGINEERING & APPLIED SCIENCES

11:05 AM – 11:35 AM  D12  Satellite Laboratories at the Front Line: The Canadian Border Approach to Narcotics Detection Within Postal and Air Cargo Facilities  
Sandra Ferreira, MS*; Chad Maheux, MS, MPA*

11:35 AM – 11:50 AM  D13  Identification on the Basis of Chamber Marks of .30 Caliber Firearms  
Ali Shahid Hussain, BS*

11:50 AM – 1:00 PM  BREAK

Linguistics

Moderator: Darren Franck  Co–Moderator: Kurt Weiss

1:00 PM – 1:20 PM  D14  Testing Basic Toolkits for Forensic Text Analysis: Lemmatizers  
Carole Chaski, PhD*; Angela Almela, PhD; Pascual Cantos, PhD

1:20 PM – 1:40 PM  D15  True and False Sexual Assault Victim Statements  
Carole Chaski, PhD*

1:40 PM – 2:00 PM  D16  Validation Testing of a Syntactic Authorship Identification Method Using Ground-Truth Data From 25 Authors  
Angela Almela, PhD*

2:00 PM – 2:15 PM  BREAK

Vehicles Collisions and Safety Standards

Moderator: Harold Franck  Co–Moderator: Michelle Hoffman

2:15 PM – 2:30 PM  D17  Recreational Vehicle (RV) Crashworthiness: Enhanced Injury Caused by Unsafe Vehicle Interior Structures Combined With Predictable Seat and Belt Failures  
Mark Pozzi, MS*; Vijay Gupta, PhD; Jack Bish, PhD

2:30 PM – 2:45 PM  D18  The Mechanics of All-Terrain Vehicle (ATV) Rollovers  
David Pienkowski, PhD*

2:45 PM – 3:05 PM  D19  Rear Impact Crashworthiness Defects Proven by Forensic Analysis and Testing: Failures of Seats, Head Restraints, and Belts  
Mark Pozzi, MS*; Paul Lewis, MS; Kenneth Saczalski, PhD

Mark Pozzi, MS*; Kenneth Saczalski, PhD; Todd Saczalski, BSMET

3:25 PM – 3:40 PM  BREAK

3:40 PM – 4:00 PM  D21  The Effectiveness of Roadside Barriers in Reducing Accident Severity  
Darren Franck, MSME*; Harold Franck, MSEE

*Presenting Author
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

Event Data Recorder (EDR) Data and Restraint Use: A Case Study
Michelle Hoffman, MS*

Mark Pozzi, MS*; Kenneth Saczalski, PhD

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

Microfluidics: Streamlining Ink Identification Using Mass Spectrometry
Morgan Demmler, MS*; Nelson Vinueza, PhD

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

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 Hara, BEng

The Magnetic Recovery and Mass Spectrometric Analysis of Fingermarks Contaminated With Cosmetics Products
Entesar Al-Hetlani, PhD*; Sara Al-Sayed, BSc; Mohamed Amin, MSc

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

Generalized Cosine Similarity for Mass Spectral Comparisons
Anthony Kearsley, PhD*; Arun Moorthy, PhD; Matthew Roberts, PhD; Edward Sisco, PhD
Multidisciplinary Session: Forensic Nursing Science and Engineering & Applied Sciences

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

*Presenting Author
# ENGINEERING & APPLIED SCIENCES

## Multidisciplinary Session: Digital & Multimedia Sciences and Engineering & Applied Sciences

### The Next 75 Years—The Application of Technology/DMS to the Forensic Sciences

**Moderator:** J. Levi White  
**Co–Moderator:** Christina Malone

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**Wednesday**

**Poster Session**

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**

*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

*Presenting Author
Afternoon Session

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

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

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

*Presenting Author
### FORENSIC NURSING SCIENCE

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

#### Poster Session

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<th>Time</th>
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<th>Authors</th>
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F1</td>
<td>The Impact of COVID-19 on Death Rates in a Rural Missouri County</td>
<td>Marie Lasater, MSN*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F2</td>
<td>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</td>
<td>Karli Hochstatter, PhD, MPH*; Jason Graham, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F3</td>
<td>Research Questionnaires to Assess Law Enforcement Use of Near-Surface Geophysics</td>
<td>Michelle Proulx*; Libby Stern, PhD; Jason Parrish, BA</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F4</td>
<td>Determining Diets Via Blood for Forensic Applications</td>
<td>Estreylla Sierra, BS*; Jan Halamek, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F5</td>
<td>When the Killer Is Waiting for You at the Door: A Case Report of a Katana Murder</td>
<td>Vittorio Gatto, PhD*; Riccardo Renzi, MD; Franco Marinelli, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F6</td>
<td>A Thousand Ways to Die: When the Suicidal Instinct Cannot be Stopped</td>
<td>Vittorio Gatto, PhD*; Riccardo Renzi, MD; Franco Marinelli, MD; Enrico Silingardi</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F7</td>
<td>Godfathers on the Beach—The Hidden Corpse Under the Sand: A Case Report</td>
<td>Federico Privitera, MD*; Gabriele Licciardello, MD*; Carlotta Scavone, MD; Andrea Giovanni Musumeci, MD; Giovanni Marci, PhD; Monica Salerno, MD, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F8</td>
<td>Is Infrared Photography Equivalent to the Use of Chromophore Testing for Muzzle-to-Target Distance Determination in Gunshot Residue?</td>
<td>Jeff Kay, MFS*; Ismail Sebetan, MD., PhD*; Paul Stein, PhD*</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F9</td>
<td>Forensic Sexual Assault Evidence: Moving Past Differential Extractions</td>
<td>Raman Sandu-Kirmer, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F10</td>
<td>The Shelf Life and Effectiveness of Blood Reagents Over Time</td>
<td>Aimee Nolan, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F11</td>
<td>Gun Violence: Recreating Shooting Incidents</td>
<td>Michele Valeros, MFS*; Ismail Sebetan, MD, PhD*; Paul Stein, PhD*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F12</td>
<td>The Variation in Suicide Note Traits Between Men and Women</td>
<td>Eleanor Abreo, MD*; Edana Stroberg, DO</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F13</td>
<td>The Role of the Ethics Committee in Research Activities during the SARS-CoV2 Pandemic</td>
<td>Barbara Abenante, MD*; Francesca Capello, MD*; Giancarlo Di Vella, PhD; Lucia Tattoli, PhD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F14</td>
<td>An Improbable Ballistic Trajectory in a Firearm Suicide With an Expanding Ammunition</td>
<td>Audrey Servoise*; Bérengère Dautreme; Elise Hardoin; Benjamin Mokdad, MD; Gilles Tournel, MD, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F15</td>
<td>Kinship vs. Unidentified Human Remains (UHR)</td>
<td>Kent Harman, MBA*</td>
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*Presenting Author
11:30 AM – 1:00 PM  F16  True Believers: An Analysis of Trauma Associated With Modern Incidences of Human Sacrifice
   Samantha McCrane, MA*; Megan Fry, MA; Chu Hsiao, PhD

11:30 AM – 1:00 PM  F17  A Case Report of Suicidal Hanging With Precipitation
   Elise Hardoin*; Bérengère Dautreme; Audrey Servoise; Albane Guigne; Anne-Claire Lhoumeau, MD; Gilles Tournel, MD, PhD

11:30 AM – 1:00 PM  F18  WITHDRAWN

11:30 AM – 1:00 PM  F19  Ossified Cephalohematoma in a 27-Day-Old Infant: A Rare Finding Diagnosed by Postmortem Computed Tomography (CT) Scan
   Michael Pagacz, MD*; Zabiullah Ali, MD

11:30 AM – 1:00 PM  F20  The Optimization of 3D Fingermark Images for Use in the Federal Bureau of Investigation’s (FBI’s) Universal Latent Workstation (ULW)
   Nicole Stanaback*; Josep De Alcaraz-Fossoul, PhD

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Thursday

Comparison Evidence

Moderator: Gulnaz Javan  Co–Moderator: Kristen Osgood

8:30 AM – 8:45 AM  F21  Fingerprints: A Signature Through Time
   Tracy Brisendine, BA*

8:45 AM – 9:00 AM  F22  WITHDRAWN

9:00 AM – 9:15 AM  F23  Ridge Volume as a Metric for Fingermark Age Determination and Sex Discrimination
   Nicole Stanaback*; Josep De Alcaraz-Fossoul, PhD

9:15 AM – 9:30 AM  F24  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
   Mayssa Hachem, PhD*

   Dmitry Kurouski, PhD*; Samantha Higgins, MSc

9:45 AM – 10:00 AM  F26  Sweat Analysis Leading to the On-Site Detection for Drugs and Alcohol in the Body
   Jan Halamek, PhD*; Giana Biddle, MS; Ashley Newland, MS; Emilynn Banks, BS; Estreylla Sierra, BS

10:00 AM – 10:15 AM  BREAK
# GENERAL

## Feet and Education

**Presenter:** Denise Abboud  
**Co-Presenter:** Francesco Sessa

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

**Presenter:** Miron Gilbert  
**Co-Presenter:** Caitlin Porterfield

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

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<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>2:45 PM – 3:00 PM</td>
<td>F40</td>
<td>How Creating Infrastructure and Incentives Can Increase Quality in Forensic Science</td>
<td>Brian Gestring, MS*</td>
</tr>
<tr>
<td>3:00 PM – 3:15 PM</td>
<td>F41</td>
<td>High Reliability Organizations: What Are They and How Do They Relate to Crime Laboratories?</td>
<td>Martin Novak, MPA*</td>
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<tr>
<td>3:15 PM – 3:30 PM</td>
<td>BREAK</td>
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### Animals and Drugs

**Moderator: Monica Broncucia-Jordan**
**Co-Moderator: Kristina Scott**

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

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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F49</td>
<td>Fetal Alcohol Spectrum Disorder (FASD) and Criminal Justice: An Italian Research Project</td>
<td>Francesco Sessa, MS, PhD; Giuseppe Li Rosi, MD; Salvatore Roccuzzo, MD; Giuseppe Cocimano, MD*; Mattimilianos Esposito, MD; Cristoforo Pomara, MD</td>
</tr>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F50</td>
<td>Unlocking the Mysteries of Faith: The Importance of Forensic Sciences in a Case Series</td>
<td>Francesco Sessa, MS, PhD*; Giuseppe Cocimano, MD*; Pietro Zuccarello, PhD; Federica Ministeri, MD; Federico Privitera, MD; Cristoforo Pomara, MD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F51</td>
<td>Croatian Forensic DNA Database: Past, Present, and Future</td>
<td>Igor Obleščuk, MS; Andrea Ledic, MS*; Adelka Makar, MS; Vedrana Škaro, PhD; Sasa Missoni, PhD; Damir Marjanović, PhD; Dragan Primorac, MD, PhD</td>
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11:30 AM – 1:00 PM  F52  Can Stab Injuries Determine the Position of the Aggressor? An Exercise With a Real Case  
Ricardo Mendonca, MS*; Sara Adriazola, MS; Eduardo Coutinho, MS; João Pinheiro, PhD, MD

11:30 AM – 1:00 PM  F53  When Book Fiction Becomes Reality: A Case Report of a Brutal Murder With a Hammer and a Related Flubromazepam Intoxication  
Vittorio Gatto, PhD*; Riccardo Renzi, MD; Franco Marinelli, MD

11:30 AM – 1:00 PM  F54  Drug Addiction and Pregnancy: A “Crack” Baby Case  
Sara Adriazola, MS*; Ricardo Mendonca, MS; Eduardo Coutinho, MS; Helena Corro, MS; João Pinheiro, PhD, MD

11:30 AM – 1:00 PM  F55  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  
Giuseppe Cocimano, MD*; Aldo Liberto, MD; Giuseppe Li Rosi, MD; Salvatore Roccuzzo, MD; Salvatore Iannuzzi, MD; Cristoforo Pomara, MD

11:30 AM – 1:00 PM  F56  A 3D Reconstruct of a Complex Road Accident  
Marco Torrisi, MD*; Martina Francaviglia, MD*; Andrea Vittorio Maria Failla, MD*; Federico Privitera, MD; Francesco Sessa, MS, PhD; Cristoforo Pomara, MD

11:30 AM – 1:00 PM  F57  Strangulation Asphyxia: Homicide or Suicide? A Practical Approach  
Laura Panata, MD*; Michela Ferrara, MD*; Giuseppe Bertozzi, MD; Luca Pistolesi, MD; Isabella Mercurio, MD; Massimo Lancia, MD; Gianpietro Volonnino, MD; Mauro Bacci, MD*

11:30 AM – 1:00 PM  F58  To Die in Pursuit of Beauty: A Case of Systemic Silicone Oil Embolism After a Breast Beauty Treatment  
Vittorio Gatto, PhD*; Franco Marinelli, MD; Riccardo Renzi, MD

11:30 AM – 1:00 PM  F59  Self-Immolation: A Case Series Investigating the Motivations and Risk Factors of a Rare Method of Suicide  
Abdulaziz Al-Malki, MD*

11:30 AM – 1:00 PM  F60  Trainspotting: Sudden Unexpected Death After Cannabis Consumption  
Giuseppe Bertozzi, MD*; Michela Ferrara, MD*; Giovanni Pollice, MD; Simona Vittorio, MS; Elena Giaconi, MD; Giovanni Gurgoglione, MD; Giuseppe Rinaldi, MD; Raffaele La Russa, MD

11:30 AM – 1:00 PM  F61  Measuring the Environmental Degradation of Traditional Drug and Novel Psychoactive Substance (NPS) Residues  
Elizabeth Robinson, MS*; Edward Sisco, PhD

11:30 AM – 1:00 PM  F62  Unidentified Child Remains: Analysis of Identifications  
Amanda Bixler, MA*

11:30 AM – 1:00 PM  F63  Eros and Thanatos: When Autoerotic Stimulation Leads to Death: A Presentation of Three Cases  
Nicola Galante, MD*; Lorenzo Franceschetti, MD; Graziano Domenico Luigi Crudele, MD; Irene Carabelli, MD; Domenico Furci, MD; Riccardo Zoia, MD

11:30 AM – 1:00 PM  F64  Youth Suicide Trends in Georgia: A Retrospective Study on the Effects of Pop Culture, Social Media, and the COVID-19 Pandemic  
Samantha Mattox, DO*; Cody Archer, BS; Elizabeth Andrews, BS; John Carter, PhD, MPH; Natasha Grandhi, MD

*Presenting Author
11:30 AM – 1:00 PM  F65  Solvent Effects in the Analysis of Explosives  
Clarissandra Braun*; Kenyon Evans-Nguyen, PhD

11:30 AM – 1:00 PM  F66  The Architecture of a Face: Craniofacial Forensic Reconstruction on Paper  
Sharon Moses, PhD*

11:30 AM – 1:00 PM  F67  Cadaver Dogs and Handlers: Detection of Ancient Bones  
Hannah Cawley*; Lisa Ludvico, PhD

11:30 AM – 1:00 PM  F68  A Cruel Case of Homicide: Execution by Carbonization After an Assault With a Knife  
Andrea Cioffi, MD*; Camilla Cecannecchia, MD*; Benedetta Baldari, MD*

11:30 AM – 1:00 PM  F69  Toxocological Effects of Amnesic Shellfish Poison (ASP) Poisoning: From Cleopatra’s Controversial Death to Modern-Day Forensic Considerations  
Francesco Galassi, MD, PhD*; Giulio Pulpito, MD*; Elena Varotto, PhD*; Valeria Aquila, MD*; Matteo Sacco, MD*; Alessandro Tarallo, MD*; Saverio Gualtieri, MD*; Fabrizio Cordasco, MD; Carmen Scalise, PhD, MD; Vincenzo Ritorto, MD*; Maria Manno, MD; Umberto Rosini, MD; Martino Maesani, MD; Angelica Zibetti, MD; Santo Gratteri, PhD, MD; Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD*

Friday—Session I

Case Studies

Moderator: Alice Blair  
Co–Moderator: Stephanie Terndrup

8:30 AM – 8:45 AM  F70  The 1921 Tulsa Race Massacre and the Demographics of Death  
Phoebe Stubblefield, PhD*; Angela Berg, MA; Robert Pickering, PhD

8:45 AM – 9:00 AM  F71  A 1966 Unsolved Homicide, Conjecture, and Forensic Inadequacy  
Tracy Brisendine, BA*

9:00 AM – 9:15 AM  F72  A Case Study: Was This a Homicide or Did The Decedent Get His Wish to Fly High and Be Fed to The Birds?  
Emily Ditto, BA*; Brett Bulington*; Carrie Costello, MS

9:15 AM – 9:30 AM  F73  A Case of Filicide: Combined Homicide by Asphyxiation and Stabbing  
Andrea Cioffi, MD; Benedetta Baldari, MD*; Camilla Cecannecchia, MD

9:30 AM – 9:45 AM  F74  A Successful Multidisciplinary Medicolegal Investigation in the Absence of a Body  
Kyle Shaw, MBBS; Krystal Locklear, BAS; Brett Harding, MBA*

9:45 AM – 10:00 AM  F75  A Case of Death From Pneumonia Due to Medical Malpractice in a Young Man Suffering From Psychiatric Disorders  
Laura Scotti, MD*; Giacomo Belli, MD; Paola Braga, MD; Matteo Moretti, MD; Silvia Visontà, PhD; Luca Morini, PhD

10:00 AM – 10:15 AM  F76  Examining Trends in Juvenile Deaths in Harris County, Texas: A Seven-Year Retrospective Review (2015–2021)  
Carolyn Berthelot, MS*; Kaeleigh Demeter, BS, BA*; Pramod Gumpeni, MD

10:15 AM – 10:30 AM  BREAK
GENERAL

At Risk Population

**Moderator: Lee Bushong**

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

**Moderator: Stacey Chepren**

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<th>Time</th>
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<th>Authors</th>
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<tr>
<td>1:30 PM – 1:45 PM</td>
<td>F84</td>
<td>The Harassment and Bullying of Forensic Scientists: The Impact of Gender, Organizational Hierarchy, and Civil Servant Status</td>
<td>Rana DellaRocco, BS, MS, MPA*; Ryan Krone, PhD; Nancy Wayne, PhD</td>
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<tr>
<td>1:45 PM – 2:00 PM</td>
<td>F85</td>
<td>Offender Motivation, Victim Vulnerability, and Systemic Bias: Understanding Patterns in Transgender Homicide Victimization Data</td>
<td>Robert Eckstein, PsyD*; Amy Michael, PhD*</td>
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<tr>
<td>2:00 PM – 2:15 PM</td>
<td>F86</td>
<td>An Ounce of Prevention: A Simple and Practical Tool for Mitigating Cognitive Bias in Forensic Decisions</td>
<td>Adele Quigley-McBride, PhD*; Tiffany Roy, MSFS, JD; Brandon Garrett, JD; Jeff Kukucka, PhD</td>
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<tr>
<td>2:15 PM – 2:30 PM</td>
<td>F87</td>
<td>Criminology Skills—Between Ethical Questions And Responsibilities</td>
<td>Giuseppina Seppini, MS*; Iolanda Ippolito, MS</td>
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*Presenting Author
2:30 PM – 2:45 PM  F88  An Update on Ethics Committee Approval Reporting in Cadaveric-Based Research Publication: A Five-Year Study
Mohammad Nasir Ahmad, PhD*; Vina Vaswani, MD, MPhil, PhD

2:45 PM – 3:00 PM  F89  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
Tamra Legron-Rodriguez, PhD*; Christopher Randles, PhD

3:00 PM – 3:15 PM  F90  The National Institute of Justice’s Forensic Science Strategic Research Plan
Lucas Zarwell, MFS*

3:15 PM – 3:30 PM  BREAK

Crime Scene Response

Moderator: Madai Batista  Co–Moderator: Lenny Reinart

3:30 PM – 3:45 PM  F91  WITHDRAWN

3:45 PM – 4:00 PM  F92  Improving Crime Scene Investigator (CSI) Response: An Early Roadmap for the Increased Quality and Effectiveness of Crime Scene Investigations
Joe Trevino, MS*

Andrea Zaferes, BS*; Robert Bready, MS

4:15 PM – 4:30 PM  F94  Assessing an Innovative Response to Intimate Partner Violence-Related Strangulation
Katherine Brown, PhD*; Tara Shelley, PhD; Cortney Franklin, PhD

4:30 PM – 4:45 PM  F95  Forensic Archeology and Crime Scene Management: Challenges and Shortcomings in the Colombian Context
Claudia Delgado-Aguacil, MSc*; Santiago Reina-Camacho, MSc

4:45 PM – 5:00 PM  F96  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)
Kelly Keyes, BS; Hope Smiley-McDonald, PhD*; Paige Presler-Jur, MS; Anum Imran, BS; Jeri Ropero-Miller, PhD

5:00 PM – 5:15 PM  F97  The Trends and Demographic Differences in Overdose Deaths Before and During the COVID-19 Pandemic in Jefferson County, Alabama
Abby Chapman*; Caitlin Wolford-Clevenger, PhD; Brandi McCleskey, MD
# GENERAL

## Friday—Session II

### Identification I

**Moderator:** Clifton Calloway  
**Co–Moderator:** Jessica Crowson

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

### Identification II

**Moderator:** Angel Miles  
**Co–Moderator:** Daniel Morgan

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<tr>
<th>Time</th>
<th>Presentation</th>
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| 10:15 AM – 10:30 AM| **F104** The Influence of the Victim-Offender Relationship on Body Disposal in Solved United Kingdom Homicides  
Anna Williams, PhD*; Kirsty Bennett, MSc |
| 10:30 AM – 10:45 AM| **F105** WITHDRAWN |
| 10:45 AM – 11:00 AM| **F106** 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  
Daniela Orozco Ramelli, DO*; Luz Perez, PhD; Ana Carolina Guatame, MSc; Alexander Sabogal; Camilo Castro, Geographer; Natalia Camacho |
| 11:00 AM – 11:15 AM| **F107** Domicile Unknown: Scientific Challenges of Identifying Homeless Decedents  
Jessica Crowson, MSc* |
| 11:15 AM – 11:30 AM| **F108** Decedent Identification: A Look at Forensic Genealogy When All Other Methods Failed  
David Kintz, BS* |
| 11:30 AM – 11:45 AM| **F109** WITHDRAWN |

*Presenting Author
GENERAL

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

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

11:30 AM – 1:00 PM  F101  The Effect of Common Drugs on Human Body Decomposition and the Soil Environment
Gabriela Mroz, MSc*; Sophie Tur fus, 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 Cecan necchia, 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 Cecan necchia, 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 Maracci, 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 Vittor io, MS*
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<tbody>
<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F120</td>
<td>Exploring Potential Factors That Can Impact Students’ Professional Identity in Forensic Science</td>
<td>Abigail Castillo, BS*; Cameron Bechard, BS; Tamra Legron-Rodriguez, PhD; Nicole Lapeyrouse, DPhil</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F121</td>
<td>The Use of Barr Bodies to Determine Sex in Samples of Forensic Significance</td>
<td>Julianna Jimenez, BS*; Kimberlee Moran, MSc; Marianne Hamel, MD, PhD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F122</td>
<td>The Effects of Sleep Deprivation and Fatigue on Crime Scene Examination</td>
<td>Kimberlee Moran, MSc*; Skylar Gohn, MSFS*; Andrea Spaeth, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F123</td>
<td>Group Sexual Violence: The Experience of Careggi Hospital in Florence (2010–2021)</td>
<td>Chiara Siodambro, MS*; Amalia Rizzo, MS; Marco Occari, MS; Francesca Pampaloni, MD; Paola D’Onofrio, MD; Edoardo Orlandi, MLL; Martina Focardi, MS; Vilma Pinch, MS</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F124</td>
<td>Forensic Aspects in Death and Injuries Due to Elderly Neglect: Interpretative Criteria in the Acknowledgment of Elderly Maltreatment</td>
<td>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*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F125</td>
<td>The Chemical Analysis of Sexual Lubricant Residue: A Comparison of Swabs Used to Perform Medical Examinations Analyzed by Spectroscopic Techniques</td>
<td>Safiya Best, PhD*; Candice Bridge, PhD; Santana Thomas, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F126</td>
<td>WITHDRAWN</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F127</td>
<td>Proteomics Profiling From Skeletal Remains for Forensic Time-Since-Death Estimations: A Systematic Review and Future Probabilities</td>
<td>Jagmahender Sehrawat, PhD*; Mohammad Nasir Ahmad, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F128</td>
<td>Self-Amputation in Complex Suicides: A Comparison of Two Cases</td>
<td>Elizabeth Higginson, MD, PhD*; Catherine Perez, MD; Eleftherios Vouyoukas, MD; Jeffrey Jentzen, MD, PhD; Allecia Wilson, MD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F129</td>
<td>“Long Covid” Injury in Health Care Workers: The Biological Damage and Indemnity Compensation</td>
<td>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</td>
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<td>11:30 AM – 1:00 PM</td>
<td>F130</td>
<td>The Role of Fauna at the Crime Scene: A Risk of Contamination or a Possible Aid in Reconstruction?</td>
<td>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*</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>F131</td>
<td>Current Status and Future Steps of Forensic Science in the Republic of The Gambia</td>
<td>Peter Dampha, BS*</td>
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*Presenting Author
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 Sehrawat, 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
### Thursday

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

**Moderator:** Lynn Garcia  
**Co–Moderator:** Jarvis Parsons

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

**Moderator:** Jarvis Parsons  
**Co–Moderator:** Lynn Garcia

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

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

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

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 Kmidoski, BS*

Friday

Evolution of Forensic Science in American Courtrooms

Moderator: J.D. Schmid  Co–Moderator: Amie Ely

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

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 Benvenutti, BA

11:30 AM – 12:00 PM  G28  Amendments to FRE 702: Some Teeth for Daubert?
Donald Shelton, PhD, JD*

*Presenting Author
### Jurisprudence

**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

**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**  
**WITHDRAWN**

**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

**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

**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

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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<tbody>
<tr>
<td>10:00 AM – 10:30 AM</td>
<td>G38</td>
<td>The Admissibility of “Child Sexual Abuse Accommodation Syndrome” in Criminal Cases</td>
<td>Donald Shelton, PhD, JD*</td>
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<td>10:30 AM – 10:45 AM</td>
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#### Trending: Forensic Experts’ Liability or Qualified Immunity?

**Moderator: Amie Ely**

**Co-Moderator: Danielle Ruttman**

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<th>Time</th>
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<tr>
<td>10:45 AM – 11:45 AM</td>
<td>G39</td>
<td>Qualified Immunity for Forensic Experts: Should Qualified Immunity be Granted? An Interactive Session</td>
<td>Stephanie Domitrovich, PhD, JD*; William Nuzum, JD, BS*</td>
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<tr>
<td>11:45 AM – 12:45 PM</td>
<td>G40</td>
<td>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</td>
<td>Stephanie Domitrovich, JD, PhD*; William Nuzum, JD, BS*</td>
</tr>
</tbody>
</table>
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*

Moderator: Ashley Epperly  Co–Moderator: Khalifa Dieng

10:00 AM – 11:00 AM  BREAK

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 (87Sr/86Sr) 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*

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, BDS

*Presenting Author
**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 Yusmaaidil 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  
Ilenia Bianchi, DMD*; Simone Grassi, MD; Caterina Bartoli, MD; Martina Focardi, MD; Antonio Oliva, MD, PhD; Vilma Pinchi, PhD

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

*Presenting Author*
### PATHOLOGY/BIOLOGY

#### Wednesday

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<tr>
<th>Time</th>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>I1</td>
<td><strong>Internal Graze Gunshot Wounds</strong></td>
<td>Nikoli Nickson, BA*, Joyce de Jong, DO; Joseph Prahow, MD</td>
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<tr>
<td>11:30 AM – 1:00 PM</td>
<td>I2</td>
<td><strong>One Nail Drives Out Another: An Atypical Suicide</strong></td>
<td>Marigrazia Calbano, MD*; Antonio De Donno, PhD; Federica Mele, MD;</td>
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<td>Mirko Leonardelli, MD; Gianluca Musci, MD; Stefano Duma, MD; Gianluca</td>
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<td>Gravili, MD; Enrica Macorano, MD; Giovanni De Gabriele, MD; Francesco</td>
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<td>Introna, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I3</td>
<td><strong>A Case of Autoerotic Death by Electrocution</strong></td>
<td>Yoo Min Ahn, DO, MS*; Chester Gwin, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I4</td>
<td><strong>A Case of Mechanical Asphyxia Due to a Bowling Pinsetter Machine and a Brief Review of the Literature</strong></td>
<td>Adam Gonzalez, MD*; Lucas Wieck, MD; J. Keith Pinckard, MD, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I5</td>
<td><strong>An Unusual Suicide With Multiple Gunshot Injuries to the Head From Two Different Weapons</strong></td>
<td>Mihaela Georgieva, MD; Martin Angelov, MD; Kamen Peev, MD; Ilina</td>
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<td>Brainova, MD; Verzhiniya Stefanova, MD.; Alexandar Alexandrov, MD, PhD;</td>
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<td>Metodi Gashev, MD, PhD; Lorenzo Gitto, MD; Biliana Mileva, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I6</td>
<td><strong>An Assault on Coagulation: A Complex Suicide by Ingestion of Warfarin and Stab Wounds</strong></td>
<td>Martina Padovano, MD*; Federico Manetti, MD; Davide Radaelli, MD; Maria Chiara David, PhD; Stefano D'Errico, MD, PhD; Matteo Scopetti, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I7</td>
<td><strong>Complex Deaths: Murder or Suicide? A Report of Three Cases</strong></td>
<td>Maria Antonella Bosco, MD*; Valentina Milone, MD*; Roberta Bibbò, MD*;</td>
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<td>Michele Ahmed Antonio Karabou, LLM*; Francesco Carpano, MD*; Santina</td>
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<td>Cantatore, MD*; Stefania De Simone, MD*</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I8</td>
<td><strong>WITHDRAWN</strong></td>
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<td>11:30 AM – 1:00 PM</td>
<td>I9</td>
<td><strong>The Decapitation of a Motorcyclist Wearing a Full-Face Helmet in a Crash Against the Guardrail: A Case Report</strong></td>
<td>Laura Panata, MD*; Isabella Mercurio, MD; Michela Ferrara, MD; Massimo Lancia, MD; Mauro Bacci, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I10</td>
<td><strong>Forensic Aspects of Overkilling in Femicides: A Comparison of Forensic Case Series</strong></td>
<td>Martino Maesani, MD*; Umberto Rosini, MD; Matteo Sacco, MD*; Angelica</td>
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<td>Zibetti, MD; Carmen Scalise, PhD, MD; Fabrizio Cordasco, MD; Saverio</td>
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<td>Gualtieri, MD*; Maria Manno, MD; Giulio Pulpito, MD*; Angela Carbone,</td>
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<td>MD; Roberto Raffaele, BE*; Valerio Aquila, PsyD*; Palmo Tavernese, MD;</td>
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<td>Pietrantonio Ricci, PhD, MD; Isabella Aquila, PhD, MD</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I11</td>
<td><strong>Intracranial Hemorrhage/Thrombosis in Infancy: Trauma or Not?</strong></td>
<td>Kyla Jorgenson, MD, MS*; Zachary Michalicek, DM; Jan Gorniak, DO; Andrea Wiens, DO, MS</td>
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<td>11:30 AM – 1:00 PM</td>
<td>I12</td>
<td><strong>Live(r) and Let Die: A Murder Case of a Woman Suffering From Alcoholic Hepatopathy</strong></td>
<td>Mirella Sabatino, MD*; Valeria Prandini, MD; Domenico De Stradis, MD;</td>
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<td>Alessandra Radagna, MD; Claudia Vignali, MSc; Luca Morini, PhD; Gulnaz Javan, PhD; Silvia Visonà, PhD; Matteo Moretti, MD</td>
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*Presenting Author
PATHOLOGY/BIOLOGY

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, DO*; 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’Aleò, 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; Anupuma 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 Andreollo, 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

Moderator: Erin Brooks  Co–Moderator: Sterling McLaren

8:00 AM – 8:15 AM  I22  WITHDRAWN

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

*Presenting Author
PATHOLOGY/BIOLOGY

8:30 AM – 8:45 AM I24 Neuropathology of Middle Meningeal Artery Embolization for Subdural Hematoma
Avneesh Gupta, MD*; Amelia Baxter-Stoltzfus, MD; Edwin Partovi, MD; Rebecca Folkert, MD

8:45 AM – 9:00 AM I25 COVID-19-Related Myocarditis: Are We There Yet?
Davide Radaelli, MD*; Denny Fuliani, MD; Elio Santangelo, MD; Pier Riccardo Bergamini, MD; Diana Bonuccelli, MD; Stefano D’Errico, MD, PhD

9:00 AM – 9:15 AM I26 Is It Really a Channelopathy? A Systematic Review of the Alterations Found at Autopsy in Brugada Syndrome
Simone Grassi, MS*; Francesca Cazzato, MS; Massimo Zedda, MD; Mònica Coll, PhD; Martina Focardi, MS; Oscar Campuzano, PhD; Ramon Brugada, MD, PhD; Vilma Pinchi, MS; Antonio Oliva, MS, PhD

9:15 AM – 9:30 AM I27 Subnuclear Renal Tubular Vacuoles in Alcoholics
Finn Auld, BMBS*; Jacqueline Parai, MD; Chris Milroy, MD, LLB

9:30 AM – 10:00 AM I28 Updates in Normal Organ Weights: A Review of 4,000+ Cases From 2009 to 2014
Meagan Chambers, MD, MSc*; Harold Sanchez, MD

10:00 AM – 10:15 AM BREAK

Injury

Moderator: Gregory Schmunk Co–Moderator: Lorenzo Gitto

10:15 AM – 10:30 AM I29 Discordance of Reported History and Diagnosis of Mental Illness in Suicides
Nicole Panzic a, BS*; Brandi McCleskey, MD

10:30 AM – 10:45 AM I30 Fatal Injuries in Traffic Accidents: A Retrospective Analysis of 294 Medicolegal Autopsies at the University Hospital of Montpellier
Emmanuel Margueritte, MD*; Eric Baccino, MD; Maguette Niang, MD

10:45 AM – 11:00 AM I31 Fatalities at the Astroworld Music Festival in Houston, Texas
Hannah Jarvis, MRCS*; Merrill Hines, MD

11:00 AM – 11:15 AM I32 Female Homicide Victims in Cook County, Illinois: A Retrospective Review
Lorenzo Gitto, MD*; Ponni Arunkumar, MD

11:15 AM – 11:30 AM I33 A Five-Year Retrospective Analysis of On-The-Job Deaths in Shelby County, Tennessee
Sarah Troyer, BA*; Danielle Harrell, DO; Scott Collier, DM

11:30 AM – 11:45 AM I34 A Fatal Abdominal Trauma Following a Fall From Height: Trauma Score, Mortality Meeting, and the Forensic Pathologist
Siddhartha Das, MBBS, MD*

11:45 AM – 12:00 PM I35 Injury Pattern in Electric Scooter Accidents: A Case Report
Giovanni Aulino, MD*

12:00 PM – 1:00 PM BREAK
# PATHOLOGY/BIOLOGY

## The Bigger Picture

**Moderator:** M.J. Menendez  
**Co–Moderator:** Kimberly Johnson

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

**Moderator:** Marisa Jacob-Leonce  
**Co–Moderator:** Lorren Jackson

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

#### 4:15 PM – 4:45 PM  
**I46**  
The Final Frontier: Human Decomposition in Low Earth Orbit  
Sherri 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*

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### Poster Session

#### 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  
Angela Phillips, MD*; Susan E. Presnell, MD*; Emma Hawkins, BS; Civan Altunkaynak, MD

#### 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, DO; 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

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

Multidisciplinary Session: Pathology/Biology and Toxicology

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*; Stephanie 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 Experimetal 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 Ropero-Miller, PhD*; Hope Smiley-McDonald, PhD; Katherine Bollinger, MS

3:00 PM – 3:15 PM  BREAK

*Presenting Author
PATHOLOGY/BIOLOGY

Moderator: Marissa Finkelstein

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 Addobbari, 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; Michella 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—Session I

2023 Jay Dix Lecture Series

Moderator: Michael Graham

9:00 AM – 9:10 AM I76 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 I76 Deaths Due to the Environment
Joseph A. Prahlow, MD*

10:00 AM – 10:15 AM BREAK

10:15 AM – 11:05 AM I76 Firearms Injuries
Andrew M. Baker, MD*

11:05 AM – 12:00 PM I76 Blunt Force Injuries
James R. Gill, MD*

12:00 PM – 2:00 PM BREAK

2:00 PM – 2:50 PM I76 Sudden Unexpected Deaths in Adults
Susan F. Ely, MD*

2:50 PM – 3:05 PM BREAK

3:05 PM – 3:55 PM I76 Deaths Associated With Sports and Recreation
Joyce L. deJong, DO*

*Presenting Author
## Friday—Session II

### Forensic Entomology

**Moderator: Casey Flint**

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<tr>
<td>8:00 AM - 8:15 AM</td>
<td>I77</td>
<td>A Non-Destructive DNA Extraction Technique for Application on Insect Puparia (Diptera: Calliphoridae)</td>
<td>Sydnee Wedel, BSc; Jonathan Parrott, PhD*</td>
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<tr>
<td>8:15 AM - 8:30 AM</td>
<td>I78</td>
<td>The American Board of Forensic Entomology-Certified Workshops: How Collaborative Efforts Between Researchers, Practitioners, and Professionals Continue to Refine and Strengthen the Discipline</td>
<td>Jennifer Rhinesmith-Carranza, DPhil*; Casey Flint, DPhil; Jeffery Tomberlin, PhD</td>
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<tr>
<td>8:30 AM - 8:45 AM</td>
<td>I79</td>
<td>An Overview of the Decomposition Process During North Dakota Extreme Winter Temperatures</td>
<td>Lavinia Iancu, PhD*</td>
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<tr>
<td>8:45 AM - 9:00 AM</td>
<td>I80</td>
<td>An Analysis of the Decomposition Process in Two Restricted-Access Environments in a Temperate Climate: Suitcases Versus Wheeled Bins</td>
<td>Hannah Andrews, MSc; Ian Dadour, PhD; Paola Magni, PhD*</td>
</tr>
<tr>
<td>9:00 AM - 9:15 AM</td>
<td>I81</td>
<td>Decomposition in the Desert: An Analysis of Initial Insect Activity on Swine Remains</td>
<td>Lauren Weidner, PhD*</td>
</tr>
<tr>
<td>9:15 AM - 9:30 AM</td>
<td>I82</td>
<td>Impacts of Climate Change in Forensic Entomology Casework</td>
<td>Michelle Sanford, MS, PhD*</td>
</tr>
<tr>
<td>9:30 AM - 9:45 AM</td>
<td>I83</td>
<td>Generating Fluorescent Blow Fly Strains to Aid in the Validation of Postmortem Interval Estimates</td>
<td>Amber MacInnis, MS*; Andre Luís da Costa da Silva, PhD; Anthony Bellantuono, PhD; Matthew DeGennaro, PhD; Jeffrey Wells, PhD</td>
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<tr>
<td>9:45 AM - 10:00 AM</td>
<td>I84</td>
<td>The Impact of Temperature and Diet on the Development of the House Fly, Musca Domestica (Linnaeus) (Diptera: Muscidae)</td>
<td>Casey Flint, DPhil*; Jennifer Rhinesmith-Carranza, DPhil; Riley Bell, BS; Jeffery Tomberlin, PhD (FSF Emerging Forensic Scientist Award Oral Presentation)</td>
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**Forensic Entomology and the Microbiome**

**Moderator: Lavinia Iancu**

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<tr>
<td>10:15 AM - 10:30 AM</td>
<td>I85</td>
<td>The Influence of Biomass and Bisection of Remains on the Production of Necrophagous Flies</td>
<td>Samantha Sawyer, PhD*</td>
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<tr>
<td>10:30 AM - 10:45 AM</td>
<td>I86</td>
<td>The Effect of Plastic Bags on Decomposition and Necrophagous Fly Composition</td>
<td>Kristi Bugajski, PhD*</td>
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<tr>
<td>10:45 AM - 11:00 AM</td>
<td>I87</td>
<td>Cadaver Microbial Signatures of the Submandibular Glands and Thyroid for Forensic Investigations</td>
<td>Sheree Finley, PhD*; Matteo Moretti, MD; Silvia Visonà, PhD; Gulnaz Javan, PhD*</td>
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</table>
PATHOLOGY/BIOLOGY

11:00 AM – 11:15 AM  I88  Current Challenges in Protein Degradation-Based Postmortem Interval (PMI) Estimation  
Stefan Pittner, PhD*; Fabio Monticelli, PhD

11:15 AM – 11:30 AM  I89  First Observations on the Environmental Impact of Terrestrial Body Decomposition Within a Canadian Continental, Humid (Dfb) Climate  
Emily Pecsi, BSc*; Shari Forbes, PhD; Francois Guillemette, PhD

11:30 AM – 11:45 AM  I90  Metabolite Profiles and Expressed Microbial Metabolic Pathways in Human Decomposition-Impacted Soils  
Jennifer Baer, MS; Lois Taylor, PhD*; Neal Stewart, PhD; Amy Mundorff, PhD;  
Dawnie Steadman, PhD; Jennifer DeBruyn, PhD

11:45 AM – 12:00 PM  I91  COVID-19 and Brain-Heart-Lung Crosstalk in the Cadaver Microbiome  
Gulnaz Javan, PhD*; Sheree Finley, PhD; Matteo Moretti, MD; Silvia Visonà, PhD

12:00 PM – 1:00 PM  BREAK

Postmortem Imaging

Moderator: Jim Caruso  
Co–Moderator: Candace Schoppe

1:00 PM – 1:30 PM  I92  Forensic Imaging Curriculum at a State-Wide Medical Investigator’s Office: The New Mexico Experience  
Jamie Elifritz, MD*; Lauren Decker, MD; Heather Jarrell, MD; Natalie Adolphi, PhD; Clarissa Krinsky, MD; Jolee T. Suddock, DO; Michael Harrell, MD; Aidan Kerr, MD; Brittany DePasquale, MD; Harley Schainost, MD; Kimberly Johnson, MD; Natalie Taylor, MD; Kethery Haber, MD

1:30 PM – 1:45 PM  I93  Micro-Computed Radiological Analysis of Traumatic vs. Iatrogenic Rib Fractures  
Giorgia Franchetti, MD*; Simone Protani, MD; Ludovico Fava, MD; Paolo Fais, MD, PhD; Barbara Bonvicini, MD; Chiara Giraudo, MD, PhD; Guido Viel, MD, PhD; Giovanni Cecchetto, MD, PhD

1:45 PM – 2:00 PM  I94  Playing With Fire: The Value and Pitfalls of Postmortem Computed Tomography (PMCT) for the Forensic Investigation of Burnt Bodies  
Antonio Oliva, MD, PhD; Simone Grassi, MD; Massimo Zedda, MD*; Federico Maiolatesi, MD; Valentina Masini, MSc; Carlotta Amatucci, MD; Beatrice Defraia, MD; Rossella Grifoni, MD; Matteo Polacco, MD; Martina Focardi, MD; Laura Filograna, MD; Vilma Pinchi, PhD

2:00 PM – 2:15 PM  I95  WITHDRAWN

2:15 PM – 2:30 PM  I96  A Pilot Study to Investigate If and How Postmortem Micro-Computed Tomography (Micro-CT) Can Be Used to Differentiate Stillbirths From Livebirths  
Francesco Lupariello, MD*; Federico Mirri, MD; Tullio Genova, PhD; Federico Mussano, PhD; Giovanni Botta, MD; Giancarlo Di Vella, PhD

2:30 PM – 3:00 PM  I97  Cold Eyes: Postmortem Iris Recognition Under Autopsy Procedures  
Jordan Reining, BS*; Kathryn Seigfried-Spellar, PhD; Stephen Elliott, PhD; Kevin O’Connor, MS

3:00 PM – 3:15 PM  BREAK
PATHOLOGY/BIOLOGY

Pediatric Mortality and Molecular Studies

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*

Poster Session

11:30 AM – 1:00 PM  I103  An Unusual Case of Self-Poisoning With Sodium Nitrite in an Asthmatic Patient
Isabella Caristo, MD*; Brenda Briasc o, 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, DO; 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*

*Presenting Author
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  Coronaric 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. Maglitt, 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

*Presenting Author
PATHOLOGY/BIOLOGY

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

*Presenting Author
Thursday

Morning Session

Moderator: Carla Rodgers

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Authors</th>
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<tbody>
<tr>
<td>9:00 AM – 9:15 AM</td>
<td>WITHDRAWN</td>
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<tr>
<td>9:15 AM – 9:30 AM</td>
<td>The Role of Graphology in the Study of Suicides and Homicides and in the Analysis of Self and Hetero-Aggressive Behaviors</td>
<td>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</td>
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<tr>
<td>9:30 AM – 10:15 AM</td>
<td>The Aurora, Colorado, Movie Theater Shooting: The Significance for Forensic Mental Health Professionals</td>
<td>Christopher Fields, MD*; Emily Gottfried, PhD*; E. Thomas Lewis, MD*; Diana Mullis, MD*</td>
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<tr>
<td>10:15 AM – 10:45 AM</td>
<td>BREAK</td>
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<tr>
<td>10:45 AM – 11:15 AM</td>
<td>An Area of Conflict—Forensic Psychiatry in Germany</td>
<td>Klaus Neudecker, MD*</td>
</tr>
<tr>
<td>11:15 AM – 11:45 AM</td>
<td>The Pitfalls in the Assessment of Insanity Due to Dissociative Disorders</td>
<td>Haseeb Haroon, MB, BS*</td>
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<td>11:45 AM – 1:00 PM</td>
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Afternoon Session

Moderator: Jessica Morel

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>1:00 PM – 1:30 PM</td>
<td>Police Suicides in Turkey</td>
<td>Nevzat Alkan, MD*</td>
</tr>
<tr>
<td>1:30 PM – 1:45 PM</td>
<td>An Examination of a Police Officer's Quality of Life 23 Years After Surviving A Penetrating Gunshot Wound to the Head: A Case Report</td>
<td>Gregory Mack, PhD*</td>
</tr>
<tr>
<td>1:45 PM – 2:00 PM</td>
<td>Family Massacres Perpetrated by the Man of the House in Turkey</td>
<td>Nevzat Alkan, MD*</td>
</tr>
<tr>
<td>2:00 PM – 2:45 PM</td>
<td>A Persistent Deficit of Attention: The Inadequate Treatment of Attention Deficit Hyperactivity Disorder (ADHD) in Correctional Settings</td>
<td>Sundeep Madireddi, MD*</td>
</tr>
<tr>
<td>2:45 PM – 3:15 PM</td>
<td>The Eight Best Practices to Improve Forensic Psychological Assessment</td>
<td>Tess Neal, PhD*; Kristy Martire, PhD*; Randy Otto, PhD</td>
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<td>3:15 PM – 3:45 PM</td>
<td>BREAK</td>
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*Presenting Author
## PSYCHIATRY & BEHAVIORAL SCIENCE

### Friday

#### Morning Session

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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</thead>
<tbody>
<tr>
<td>9:00 AM – 10:00 AM</td>
<td>J15</td>
<td><strong>Forensic Pathology for Forensic Psychiatrists</strong></td>
<td>Anita Rajkumar, MD*</td>
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<tr>
<td>10:00 AM – 10:15 AM</td>
<td>J16</td>
<td><strong>A Case of Munchausen Syndrome By Proxy: The Role of Legal Medicine in Child Abuse Management in Emilia-Romagna</strong></td>
<td>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</td>
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<td>10:15 AM – 10:45 AM</td>
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<td><strong>BREAK</strong></td>
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<tr>
<td>10:45 AM – 11:00 AM</td>
<td>J17</td>
<td><strong>Homicide-Suicide in Older Couples</strong></td>
<td>Laura Renard, MD*; Nathalie Jousset, MD</td>
</tr>
<tr>
<td>11:00 AM – 11:30 AM</td>
<td>J18</td>
<td><strong>A Multidisciplinary Approach in a Sexual Homicide Scene</strong></td>
<td>Caterina Bosco, MD*; Lucia Tattoli, PhD; Cristiano Barbieri, PhD; Ignazio Grattagliano, PhD; Francesca Capello, MD*; Giancarlo Di Vella, PhD</td>
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<td>11:30 AM – 1:00 PM</td>
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<td><strong>BREAK</strong></td>
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#### Afternoon Session

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<th>Time</th>
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<tr>
<td>1:00 PM – 1:45 PM</td>
<td>J19</td>
<td><strong>Citation Analysis of Misinformation Regarding Parental Alienation Theory</strong></td>
<td>William Bernet, MD*; Shenmeng Xu, PhD</td>
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<tr>
<td>1:45 PM – 2:45 PM</td>
<td>J20</td>
<td><strong>Parental Alienation Relational Problems and the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)</strong></td>
<td>William Bernet, MD*</td>
</tr>
</tbody>
</table>
PSYCHIATRY & BEHAVIORAL SCIENCE

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

11:30 AM – 1:00 PM  J24  Δ8-Tetrahydrocannabinol (Δ8-THC) Is Equipotent to Δ9-Tetrahydrocannabinol (Δ9-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 Introna, 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 Carabellesse; Felice Francesco Carabellesse, MD; Alan R. Felthous, MD*; Alessandra Parente, MD*
QUESTIONED DOCUMENTS

Thursday

Security Designs, Alterations, and Counterfeiting

Moderator: Zain Bhaloo
Co–Moderator: Larry Olson

8:30 AM – 9:00 AM K1 An Examination of Questioned Documents Using Digital Grid Overlays
Mark Goff, BA*; McKenzie Weyh, BS

9:00 AM – 10:00 AM K2 The Security Design of the Next Generation U.S. Passport, U.S. Emergency Passport, and U.S. Bridge Visa
Traci Moran, MFS; Joel Klotnick, MS*

10:00 AM – 10:30 AM BREAK

10:30 AM – 10:45 AM K3 The Characterization of Polymers of Counterfeit Identity Documents of European Union (UN) Member States
Jasna Galekovic*; Veronika Marinovic, PhD; Andrea Ledic, MS

10:45 AM – 11:15 AM K4 WITHDRAWN

11:15 AM – 11:45 AM K5 Fraud and the United States Postal Service (USPS): A Focus on Stamps
Lisa Tolli, MS; Patricia Manzolillo, MSFS*; Stephanie Kingsbury, MSFS; Haley Elliott, MS

11:45 AM – 1:30 PM BREAK

Forensic Document Examination Standards Development and Trending Topics

Moderator: Ted Burkes

1:30 PM – 1:45 PM K6 An Update on Standards Development Activities Related to Forensic Document Examination
Kevin Kulbacki, MSFS*

1:45 PM – 2:00 PM K7 The Forensic Document Examination (FDE) Steering Committee
Timothy Campbell, BSc*

2:00 PM – 3:00 PM K8 The Forensic Document Examination (FDE) Forum
Carl McClary, MS*; Karen Nobles, MFS; Samiah Ibrahim, BA, BSc

Poster Session

11:30 AM – 1:00 PM K9 Black-Box Metamodeling Between Feature Combinations for Paired Comparisons of Documents of Forensic Handwriting Data
Cami Fuglsby, MS*; Christopher Saunders, PhD; Danica Ommen, PhD; JoAnn Buscaglia, PhD (FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 AM – 1:00 PM K10 Fontastique! Framework for the Comparison and Evaluation of Currently Available Typeface Identification Applications for the Modern Forensic Document Examiner
Zain Bhaloo, MSc; BSch*

*Presenting Author
**QUESTIONED DOCUMENTS**

11:30 AM – 1:00 PM  
**K11**  
**Handwriting Variability in Adult Writers With Attention Deficit Hyperactivity Disorder (ADHD): Pre- and Post-Medication: A Pilot Study**  
*Christopher Burke, MS*; *Heidi Harralson, MA*; *Larry Miller, PhD*

11:30 AM – 1:00 PM  
**K12**  
**Quantifying Bayes Factors for Forensic Handwriting Evidence**  
*Anyesha Ray, BS*; *Danica Ommen, PhD*

11:30 AM – 1:00 PM  
**K13**  
**Quantifying Writer Variance Through Rainbow Triangle Graph Decomposition of the Common Word “the”**  
*Alexandra Arabio, BS*; *Alicia Carriquiry, PhD*; *Danica Ommen, PhD*

11:30 AM – 1:00 PM  
**K14**  
**Training, Education, and Certification of Forensic Document Examiners in the United States**  
*Lauren Turnacioglu, BA*; *Lyndsie Ferrara, PhD*; *Gary Licht, MS*; *Khody Detwiler, BS*  
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 AM – 1:00 PM  
**K15**  
**Twin Convolutional Neural Networks to Classify Writers Using Handwriting Data**  
*Pilhyun Lim, MS*; *Danica Ommen, PhD*

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**Friday**

**Handwriting, Algorithms, and Ink Analysis and Evaluation**

*Moderator: Dianne Flores*

8:30 AM – 8:45 AM  
**K16**  
**A Comparison of FLASH ID and Handwriter: Two Handwriting Analysis Programs**  
*Stephanie Reinders, PhD*; *Danica Ommen, PhD*; *Alicia Carriquiry, PhD*

8:45 AM – 9:00 AM  
**K17**  
**Determining Authorship Among the Handwriting of Fifth Graders: A Case Study**  
*Sandra Raudabaugh, BS*

9:00 AM – 9:15 AM  
**K18**  
**Handwriting Comparison Examinations With Limited Known Writing Samples**  
*Donald Moryan, BS*

9:15 AM – 9:30 AM  
**K19**  
**Signature Verification Algorithms: What They Are, How They Are Used, and How to Evaluate Them**  
*Kevin Kulbacki, MSFS*; *Nikolaos Kalantzis, MSc*; *Batya Fuchs, MSc*

9:30 AM – 10:00 AM  
**BREAK**

10:00 AM – 10:15 AM  
**K20**  
**Signature Verification Algorithms: Potential Forensic Uses and Bias Considerations**  
*Kevin Kulbacki, MSFS*; *Nikolaos Kalantzis, MSc*; *Batya Fuchs, MSc*

10:15 AM – 10:45 AM  
**K21**  
**The Robert Durst Case: Revisiting Myths of Handprinting Examinations**  
*Linton Mohammed, PhD*; *Lloyd Cunningham*

10:45 AM – 11:00 AM  
**K22**  
**A Failure Analysis of Ink Samples Using Multiple Modes of Pyrolysis-Gas Chromatography/Mass Spectrometry (PY-GC/MS)**  
*Athena Nguyen, BS*

11:00 AM – 11:15 AM  
**K23**  
**A Spectroscopic Evaluation of Two Black Pen Inks Using Video Spectral Comparator**  
*Rafal Turek, MS*
## TOXICOLOGY

### Wednesday

**Poster Session**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
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<tbody>
<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L1</td>
<td><strong>WITHDRAWN</strong></td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L2</td>
<td>The Quantitation of Five Benzodiazepines and Zolpidem in Whole Blood Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</td>
<td>Ivana Antunovic, MSc*; Sandra Mudrić, MSc; Tomislav Houra, MSc; Elizabeta Stojaković, MSc; Maja Jelena Čop, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L3</td>
<td>The Quantitation of Fentanyl, P-Fluorofentanyl, and Xylazine in Postmortem Blood by Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</td>
<td>Michael Truver, PhD*; Sara Brogan, BS; Amy Kinsey, MS; Jennifer Hoyer, MS; Chris Chronister, PhD; Bruce Goldberger, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L4</td>
<td>A New Approach for Identifying the Postmortem Formation of Ethanol: The Development and Validation of a Salt-Assisted Headspace/Gas Chromatography/Flame Ionization Detector (HS/GC/FID) Method for the Determination of Ethanol in Vitreous Humor</td>
<td>Giacomo Musile, PhD*; Nicola Pigaiani, MD; Emma Pasetto, BSc; Marco Ballotari, MSc; Federica Bortolotti, PhD; Franco Tagliaro, MD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L5</td>
<td>Comparing Density Functional Theory (DFT) Calculations and Surface-Enhanced Raman Spectroscopy (SERS) Results to Differentiate Structurally Similar Fentanyl Analogs</td>
<td>Sevde Dogruer Erkok, PhD*; Emily Hernandez, BS*; Bruce McCord, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L6</td>
<td>The Simultaneous Determination of 24 Designer Benzodiazepines in Hair Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)</td>
<td>Jongsook Rhee, PhD*; Byung Suk Cho, MS; Hyewon Baik, MS; Yujin Park, PhD; Ilchung Shin, PhD; Jihyun Kim, PhD; Sanggil Choe, PhD; Suncheun Kim, PhD; Eunmi Kim, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L7</td>
<td>Evaluating Cannabinoid Stability in Different Conditions and Validating THC-O and THC-P for Oral Fluid Analysis</td>
<td>Cody Paseur, MSFS*; Curt Harper, PhD; Elizabeth Gardner, BS, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L8</td>
<td>Substance-Related Pediatric Deaths Examined at the West Tennessee Regional Forensic Center: An Analysis of the Past 16 Years</td>
<td>Ibrahim Ortanca, MD*; Danielle Harrell, DO</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L9</td>
<td>Is a Subdural a Time Capsule?</td>
<td>Brianna Smyth, BS*; Dina Swanson, MS; Julia Pearson, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L10</td>
<td>The Detection of Ethanol Consumption Markers and Drugs in Urine Samples From Inmates of Two German Prisons</td>
<td>Vanessa Thoma, MD*; Anette Franz, MD; Laura Huppertz, BS; Volker Auwärter, MD; Annette Thierauf-Emberger, MD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L11</td>
<td>Quantitative and Qualitative Analysis of Fentanyl and Its Analogs in Urine Using Disposable Pipette Extraction</td>
<td>Dominic Minasi-Tapia, MS*; Ihouma Igwilo, MBBS, MSFS; G. Brent Dawson, PhD; Tara Arends, MS; Michael Baldwin, BA</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L12</td>
<td>Machine Learning Approaches to Make Data Driven Decisions in Forensic Science Application by Using Fourier Transform Infrared (FTIR) Spectroscopy</td>
<td>Bilkis Mitu, PhD*; Lenka Halamkova, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L13</td>
<td>The Analysis of Depressants and Psychedelic Drugs From Vitreous Humor Using Liquid-Liquid Extraction (LLE) and High-Performance Thin-Layer Chromatography (HTPLC) Plates</td>
<td>Neha Afaria, PhDc*; Ashok Kumar Jaiswal, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L14</td>
<td>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</td>
<td>Rebecca Smith, MS*; Anthony DeCaprio, PhD; Anamary Tarifa, PhD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L15</td>
<td>Evaluating Cannabidiol (CBD) for Potential Interference in Six Commercial Homogeneous Cannabinoid Urine Screening Kits</td>
<td>Ashley Pokhai, BA*; Justin Poklis, BS; Grace Williams, PhD; Carl Wolf, PhD, MS</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L16</td>
<td>The Revival of Opioids Among Young People: An Overview on Toxicological, Epidemiological, and Social Aspects</td>
<td>Simona Nicoli, MD; Cristina Caterino, MD; Marcello Benevento, MD; Giampiero Bottari, MD; Francesco Clemente, MD; Francesco Caravetta, MD; Biagio Solarino, PhD*</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L17</td>
<td>A Combined Death by Food Aspiration and Acute Citalopram Intoxication</td>
<td>Pietro Zuccarello, PhD*; Giulia Carnazza, Msc; Francesco Sessa, MS, PhD; Monica Salerno, MD, PhD; Cristofo Pomara, MD; Nunziata Barbera, MD</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L18</td>
<td>Donepezil Concentrations in Postmortem Toxicology</td>
<td>Jolene Bierly, MSFS*</td>
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<tr>
<td>7:30 PM – 9:00 PM</td>
<td>L19</td>
<td>The Development of an Extraction Method for the Analysis of Synthetic Opioids in Bone Samples Using the Bead Ruptor</td>
<td>Kala Babb, BS*; David Cohen, MD; Justin Poklis, BS; Emanuele Alves, PhD</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L20</td>
<td>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)</td>
<td>Eduardo De Campos, PhD; Dehliia Lang*</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L21</td>
<td>WITHDRAWN</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L22</td>
<td>Color Me Stable: Choosing an Adequate Blood Collection Tube for Venous Blood Toxicological Analyzes</td>
<td>Gabrielle Daigneault; Anabelle Carbonneau, BSc; Elizabeth Charron, BSc; Genevieve Dube, BSc; Stephanie Savard; Brigitte Desharnais, PhD; Edith Viel, BSc; Alexandra Doyon, MSc*; Souryvanh Nirasay, PhD; Pascal Mireault, MSc</td>
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<td>7:30 PM – 9:00 PM</td>
<td>L23</td>
<td>Solid Phase Extraction of Novel Synthetic 2-Benzylbenzimidazole Opioid Compounds: “Nitazenes”</td>
<td>Emily Eng, MSFS*; Stephanie Reichardt, MSFS*</td>
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*Presenting Author
TOXICOLOGY

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; Ilina Brainova, MD, PhD; Verzhiniya Stefanova, MD; Alexandar Alexandrov, MD; Metodi Goshev, MD, PhD; Biliana Mileva, MD; Lorenzo Gatto, 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-Sorbert 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  WITHDRAWN

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 Veeser, 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 Δ9-Tetrahydrocannabinol (THC) in Oral Fluid Using the Fast Blue BB (FBBB) Test
Roberta Gorziza, PhD*; Nicole Valdes, MS; Marilyn Tinoco, MS; Jose Almirall, PhD

*Presenting Author
TOXICOLOGY

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

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 Ropero-Miller, PhD

10:15 AM – 10:30 AM  BREAK

Novel Psychoactive Substances

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

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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 Fentalog Degradation Pathways
                        Madison Schackmuth, BS*; Sarah Kerrigan, PhD

11:45 AM – 1:00 PM  BREAK

Multidisciplinary Session: Pathology/Biology and Toxicology

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 Experimetnal 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 Ropero-Miller, PhD*; Hope Smiley-McDonald, PhD; Katherine Bollinger, MS

3:00 PM – 3:15 PM  BREAK

*Presenting Author
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 Nitite Poisoning: A Case Series of an Emerging Suicide Mechanism
Ethan Blocher-Smith, MS, DO*; Elizabeth Douglas, MD; Joseph Prahlow, MD

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 (Δ8 and Δ9)
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  α-Pyrrolidinoisohexanophenone (α-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

*Presenting Author
General Toxicology

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 Domonoski, 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

Moderator: Robert Middleberg  
Co–Moderator: Nikolas Lemos

1:00 PM – 5:00 PM  L66  The 22nd Annual Postmortem Pediatric Forensic Toxicology Session  
Robert 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

Thursday

Moderator: Kenneth E. Melson, JD  
Co–Moderator: Carla M. Noziglia, MS

8:00 PM – 8:25 PM  
**LW1**  
The Death Ray: A Historical and Forensic Investigation of an Italian Mystery  
Matteo Borrini, PhD*; Marco Morocutti; Luigi Simeoni; Lorenzo Paletti, MSc

8:25 PM – 8:50 PM  
**LW2**  
The Case of the Count’s Cranium: (Mis)identification of Revolutionary War Colonel Carl Emil Ulrich von Donop (1732-1777)  
Thomas A. Crist, PhD*; Richard F. Veit, PhD; Hillary A. DelPrete, PhD

8:50 PM – 9:15 PM  
**LW3**  
The Somerton Man—Australia’s Coldest Case Solved!  
Colleen M. Fitzpatrick, PhD*; Derek Abbott, PhD

9:15 PM – 9:35 PM  
**LW4**  
The Identification of the 1961 Bibb County Teenage Hitchhiker Using Forensic Genetic Genealogy (FGG)  
Colleen M. Fitzpatrick, PhD*; Misty Gillis

9:35 PM – 10:00 PM  
**LW5**  
Who Murdered Charles Lindbergh, Jr., and Why?  
Lise A. Pearlman, JD*; Peter Speth, MD, Jamie E. Benvenutti, BA

*Presenting Author*
YFSF POSTER SESSION

Friday

Anthropology

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

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 Money, 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

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

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

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

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

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

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

*Presenting Author
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- Umit Karabiyik – Reviewer
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- Erica Phung – Reviewer
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<tbody>
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Wescott, Daniel-A19
   National Institute of Justice, Forensic Sciences Foundation (Grant Support)
Wesley, Allyson-E51
   Towson University (Stipend)
White, Joseph Levi-C29, C34
   Apple (Discussion of Commercial Products or Services)
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   Microsoft (Discussion of Commercial Products or Services)
Williams, River-B166
   Procter & Gamble, Reckitt, Clorox, Henkel, Evident (Discussion of Commercial Products or Services)
Williams-Mitchem, Shannan-E122
   National Institute of Standards and Technology (Employee)
Wilson, Amanda-E103
   National Institute of Standards and Technology, Center for Statistics and Applications in Forensic Science (Grant Support)
Wilson, Walter-B23
   DJO, National Institute of Justice (Grant Support)
Wohlfahrt, Denise-B58
   Illumina, QIAGEN (Discussion of Commercial Products or Services)
   National Institute of Justice (Grant Support)
Wolfe, Christopher-A164
   National Institute of Justice (Grant Support)

Wong, Kameran-W19
   Verogen (Discussion of Commercial Products or Services)
Wu, Shan-Fu-B176
   Verogen, Thermo Fisher Scientific (Discussion of Commercial Products or Services)
   Verogen (Employee)

Y

Young, Thomas-W10
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Z

Zapico, Sara-A160
   Center for Advanced Research in Forensic Science (Grant Support)
Zascavage, Roxanne-B179
   Promega, Oxford Nanopore Technologies (Discussion of Commercial Products or Services)
   National Institute of Justice (Grant Support)
Zemmels, Joseph-D38
   CSAFE, NIST, Iowa State (Grant Support)
AUTHOR FINANCIAL DISCLOSURE

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A

Aardema, Adrienne-H85
Adams, Bradley-A78
Adams, Donovan-A42
Adelizzi, Betsy-E22
Adolph, Natalie L.-W12
Adserias-Garriga, Joe-W14, G35
Afra, Kamar-A118
Aggazzotti, Cristina-D11
Agyemang, Ariana V.-A10
Akbar Mohammed-A151
Akiba, Norimitsu-D16
Akiyama, Cliff-E99
Akridge, Scott-W16
Al Hinnawi, Sarah-H35, H92
Alawadhi, Abdullah-A83
Albert-Bolinski, Geoffrey-F23
Aldy, Kim N.-W5
Al-Hetlani, Entesar-D18
Alim, Denys-H106
Almela, Angela-D10
Al-Qahtani, Sakher-W14
Alzumaili, Bayaa-H77
Ambrosius, Teresa L.-B51, W9
Amin, Awais-E102
Amin, Mohamed O.-E108
Amir Nadeem, Muhammad-K18
Ammer, Saskia T.M.-A44, A45
Andre, Victoria-B172
Angele, Miriam S.-W4
Annas, George David-I16
Aquila, Isabella-D41, E1, E12, H32, H96
Archibald, Emily-A50
Armelli, Kerianne-A17
Aronson, Libby-H63
Aschheim, Kenneth-G18, G32
Aungst, Jenna-A19
Awadalla, Mohamed-J18
Ayer, Beighley-B14
Aysa Bravo, Abraham-W11

B

Baber, Sydney-E113
Baker, Andrew M.-H115
Balbo, Arianna-H49
Baldwin, Angelia-E5, H8
Banks, Elsie-Kay-E19
Baronti, Arianna-H67
Baumann, Michael R.-W20
Bayer-Broring, Carolyn-J14
Bennett, Krista-A133
Berg, Gregory E.-A39
Berisha, Kelly-E69
Bertozzi, Giuseppe-E42, H11
Bhaloo, Zain-S2
Bhula, Avni-G33
Bieber, Frederick R.-W19
Biedrzycki, Lynda-W20
Bini, Giulia-E13
BinMarzook, Khalid-H6
Bishop, Brett M.D-W17
Blout, Hillary-W15
Bodini, Sofia-B121
Boggess, Kayce-E10
Bolt, Haley-E110
Bonci, Camilla-E4

Borrini, Matteo-A52, A144, LW3
Bory, Jason R.-W5
Bosco, Caterina-I10
Botch-Jones, Sabra R.-W6
Bothma, Pearl-A147
Bouderaban, Fatimah A.-A119
Bouju Davies, Lauren-E78
Boyd, Donna-A176
Bradshaw, Brenda-G16
Brandt-Litavec, Helen-A2
Brodeur, Bruce A.-B194
Brosz, Helmut-A39
Broggini, Patrick-B85

C

Cabelus, Nancy-B57, E70
Calvano, Mariagrazia-F2, H56
Camardona, Braden-E79
Campbell, Timothy-S2
Cano, Kris-W9
Cantos Gómez, Pascual-D13
Capasso, Emanuele-H83
Capello, Francesca-E42
Capistran, Briana-B87
Carabellese, Felice-F-W16
Cardia, Luigi-F3
Carney, Amy-B57, E71
Carney, John-F26
Carver, Madison-B198
Caruso, James L.-S1
Cataldo-Ramirez, Chelsea-A139
Caviak, Mehmet-H121
Cazzato, Francesca-H95
Cechetti, Matteo-H1
Cervantes, Marianna-A134
Chang, Christopher-B192
Chapman, Abby-E33
Chauhdry, Muhammad-B34, B164, E48
Cheng, Kevin-B139, B143
Chiang, Michael-I2
Cheng, Ya-Chih-B162, B211
Chen, Xueqin-E55
Cho, Sohee-B157
Christensen, Angi-A169
Christy, Brenda B.-B90
Chu, Elaine Y.-A121
Chu, Joyce-A55
Chung, Grace-G26
Ciarelli, Mauro-H25
Cieri, Laura-K37
Cirillo, Laura-A108
Ciruzzi, Maria-F21
Collard, Chauvemey-M.J.-A114
Collard-Stalder, Hailey-A58
Collura, Kaitlin-K8
Concato, Monica-H135
Concheiro-Guisán, Marta-K21, K47
Corelman, Heleen-G23
Corradi, Luciano-G13
Costantino, Andrea-H65
Croom, Nicole A.-A120
Crosby, James-E62
Cross, Hannah-A64
Crowder, Christian-W14

Cuchara, Breanna-H94
Cukrov-Bezbradic, Slavena-B25
Culbertson, Hilary-B200
Cunningham, Lloyd W.-W17
Currie, Krista A.-W15

D

Daly, Stephen-B92
D’Antoni, Leighton-B149
Davies, Keir-E63
Davis, Kymeri-E64
De Alcaraz-Fossoul, Josep-E105
De Boer, Hans-H47
De Cree, Theresa-A61
De Crisco, Dean M.-W16
De Luca, Benedetta-Pia-F2
De Simone, Stefania-E35, H14, H100
Decker, Summer-J-W12
Dedouit, Fabrice-W12
Deem, Emily-B3
Delong, Joyce L.-H115
Del Duca, Fabio-H69
Delelios, Danielle-A62
Delegado, Thomas-A109
Delger, Dana-F7
DeMenna, Gerald-L1
DePaolo, Frank-A74
Depp, Randy-A14
Deveci, Cem Yigit-H21
Devers, Kelly G.-W7
Devlin, Joanne-A41
Diaz, Ramon-B165
Dickinson, Gregory-H61
Dirkmaat, Dennis C.-A73, A84
Domínguez, Victoria M.-W14
Donfack, Joseph-B114
D’Orazio, Amanda L.-W6
Dozier, Katherine-K49
Dragovnic, Ljubisa J.-J10
Duma, Stefano-H55
Dumais, Alexandre-W16
Dunn, Francesca-A137
Dunn, Rhian-A8
Duran, Kristine-E107
Dwyer, Isis-A116
Dykstra, Josiah-C17

E

Ebert, Lars C.-W12, H132
Edgell, Joy-H26
Edwardoff, Mayra-W19
Eisenhart, Linda-J7, J13
Eldridge, Heidi-S1, B96
Eliopoulos, Constantine-LW5
Ellingham, Sarah-W14
AUTHOR FINANCIAL DISCLOSURE

Enslen, Odile-E8
Esposito, Massimiliano-G15
Etaywe, Awni-D7
Evans, Tiara-K34

F

Failla, Andrea Vittorio Maria-F56, H74
Fang, Yung-Hsuan-G21
Farid, Ajang Armin-G8
Feigin, Gerald-F36
Felthous, Alan R.-W16
Ferrara, Michela-E119, H19
Ferre, Jamie-E76
Fetchet, Mary-A79
Field, Olivia-E83
Filko, Andrijana-E126
Fiorentini, Clara-H22
Firek, Julianna-F24
Fisher, Barry-S3, B83
Fitzpatrick, Colleen M.-W19, B145, LW2, LW4
Fleming, James-Y12
Flowe, Heather-I25
Ford, Jonathan M.-W12
Fox, Sherry-A93
Frazier, Kimberly-H37
Freeman, Kelly-S2
Freitas, Nelson-G10
Frese, Madison-E111
Frigiolini, Francesca-H20
Fulgenzi, Laura-H9

G

Gabrys, Natalia-K9
Gaddis, Katherine-E14
Gaines, Allison N.-W21
Garfinkel, Simson-C14
Gariglio, Sara-K14
Garrett, Brandon-B52
Garza, Shelby-A26
Georget, Charles-G28
Geradts, Zeno-C3
Gestring, Brian-B84
Gettings, Katherine-W2
Getz, Allison-B51
Giacani, Elena-H17
Gill, James-H115
Gitto, Lorenzo-H118
Gladyck, Stephanie-B158
Go, Matthew C.-A33
Goden, Christopher-A102
Godfrey, Murrell-D35
Godshalk, Maeve-Y1
Gokool, Vidia A.-B184
Goldstein, Justin Z.-A23
Goliath, Jesse R.-A115
Gong, Samantha-B190
Gonzalez, Jose-B214
Goets, Alexis-A113
Graham, Ema-B52
Graham, Jason K.-A75
Granger, Cheyenne-B32
Green, James A.-J23
Grosso, Katherine-E54
Grover, Celeste M.-B118
Gunce Eskikoy, Melahat Elif-E26
Gunther, Wendy-H90

H

Haase, Nicole-K30
Haberstock, Isabella-B21, Y9
Hadley, Samantha-E52
Hainsworth, Sarah-D30
Hampf, Peter-G27
Han, Valeri-Y6
Harden, Angela-A178
Hardman, Hope-B11
Harper, Curt E.-W6
Harrell, Michael-H123
Harris, Neil-H41
Hart, Anita-E57
Hayes, Jonathan-H115
Heacock, Derek-Y11
Heidere, Katie S.-W5
Henson, Tanisha-S3
Hentschel-Fey, Kelsey-A40
Herbst, Brian-D24, D27
Hessel, Evin-A54
Heustis, Marilyn A.-W16, K57
Hewitt, Curt-B95
Hietpas, Jack-B79
Hirsch, Marissa-W16
Hoffman, Michelle-D35
Holcombe, Savannah-A135
Holmes, Ashley-E3
House, Molly-H2
Houston, Rebecca J.-W16
Hu, John-H3
Hubbard, Hannah-E109
Hunter, Cheryl-S2
Hurley, Kira-B61
Hydoh, Hideki-W12

I

Ip, Eva-I24
Isla, Marilyam-A107
Isenschmid, Daniel S.-W16
Iula, Donna M.-W20
Iyer, Hari-F17

J

Jamshaid, Tahir-B33
Janysek, Brian-S2
Jarvis, Hannah-H119
Jasiak, Caroline-A6
Javan, Gulnaz-G2
Jayakumar, Jayapriya-G5
Jayaraman, Jayakumar-G24

Johnson, Liam-A25
Johnson, Rachel-E27
Jones, Graham R.-W16
Jones, John Paul-W2
Jones, Joseph-W6
Juarez, Chelsea-W19

K

Kadash, Kristy-B40
Kaege, Valeria-E72
Kanchan, Tanuj-G22
Kaplan, Molly-A87
Kaur, Rattandee-D19
Ke, Pucheng-K40
Kemper, Bart-D46
Kennedy, Ashley-A34
Kennedy, Roderick T.-S1
Keyes, Kelly A.-E121, H103
Kim, Dong-Ho-A140
Kim, Eunmi-K5
Kim, Jong In-A163
King, Joonyeong-B106
King, Pamela A.W.-W9
King, Steff-E23
Kintz, David-E28
Klares, Alexandra-A46
Klonsky, Ken-W15
Klonsky, Ray-W15
Knight, Renee-B56
Kolpan, Katharine-A7
Konda, Amelia-A127
Korolija, Marina-E16
Kortonick, Kristine-A65
Kovari, Ivett-E130
Krauss, Shannon T.-W5
Krebs, Kyle T.-W21
Krishan, Kewal-A129
Kroll, Jeroen J.F.-W12
Kronstrand, Robert-K50
Krotulski, Alex J.-W5, W20
Kulbacki, Kevin P.-J6
Kumar, Swathi A.-W19
Kunugi, Yuki-D40
Kurtzman, Robert A.-H117

L

La Tegola, Donatella-I20
L’Abbe, Ericka N.-A37
Laing, Richard R.-W5
Lamb, Michael-K51
Landrie, Rachael-H46
Lane, Katherine-A99
Lanfranchi, Anthony-A69
Leach, Rose-A21
LeBeau, Marc A.-W6, K33
Lee, Dayong-W16
Lee, Hana-Y3
Leonardelli, Mirko-A130
Lesciotto, Kate-A35
Li, Sihai-B117
Liccariello, Fausto-H76
Liccariello, Gabriele-H72
Lilliedahl, Ruby E.-K10

178
AUTHOR FINANCIAL DISCLOSURE

Lockhart, Emily-B206
Logan, Barry K.-S1, W16, W20
Lopez, Angelina-E106
Lorber, Amy-H88
Love, Jennifer-A148
Ludeman, Matthew-B5
Lugli, Melania-I1
Lupariello, Francesco-E117, H24
Lyle, James-C21
Lynch, Ashlee-B17
Lynch, Barry K.-S1, W16, W20
Lynch, Robert-S2
Lynch, Virginia A.-BS7, E66, E68
Lyness, James-H125
Lyttle, Morgan-E15

Macorano, Enrica-H58
Madrigal Reyes, Alejandro-W11
Magliotto, Andrea Nicoletta Maria-I11
Maier, Christopher-A126
Malfroy Camine, Lise-G7
Maloney, Katherine F.-W7
Mamedov, Sergey-D50
Manetti, Alice Chiara-E6
Manetti, Federico-D42, H34, I12, I13
Manna, Modhuparna-S2
Marshall, Charla-W19
Martin, Clément-D49
Massari, Kayla-E50, Y8
Mavroudas, Sophia-A36
Mazuchowski, Edward L.-W12
Mbbonani, Thandolwethu-A141
McClary, Carl R.-S1, J1
McDonald, Gary-F27
McKay, Kelsey-E27
McKendrick, Sarah-E132
McKiel, Mary C.-W9
McMilton, Jeremy-D25
Meckel, Lauren A.-A172
Mele, Federica-G3
Melinek, Judy-S3
Meloro, Raphaela-A38, A110
Menendez, M.J.-W20
Merlino, Chiara-H98
Mertz, Lisa A.-W15
Mikellide, Maria-A92
Miller, James-B210
Millotte, James-E132
Milroy, Christopher M.-S1
Ming, Ann-Marie-H39
Miranda, Michelle D.-B80
Miranker, Molly-A5
Mirza, Mohammad Meraj-C12
Mishra, Amarnath-E38
Miyashiro, Rand-H104

Moe, Mariah-A18
Mogle, Mark D.-W11
Mohammed, Linton A.-W9, W17
Mohr, Amanda L.-W6
Molnari, Giulia-H48
Molt, Malory-E94
Monteiro, Francis Nanda Prakash-H126
Moore, Clara G.-J21
Moorthy, Arun-B208
Moosavi, Amy-A17
Mori, Haruka-I11
Moses, Sharon-E29
Moss, Aja-S2
Moss, Natascha-B47
Musco, Gianluca-E11
Musile, Giacomo-K55

Nardoni, Francesco-H98
Nassif, Joe Bou-W16
Nazar, Shahid-B160
Neuman, Maddisen-B100, E96
Newland, Ashley-E86
Newman, Reta M.-W3, W20
Nguyen, Lam-C19
Nguyen, Teresa-W7
Nicoli, Simona-H79
Nixon, John-D36, F9
Nobles, Andrea Carolina-K60
Novak, Martin-C35
Novroski, Nicola-B175
Nuzzolese, Emilio-G4, G6, G11

OBrien, Meg-J10
O’Donnell, Christopher J.-W12
Oesterhelweg, Lars-W12
Oettel, Bailey-A122
O’Neal, Bobbi Jo-S3
Onor, Dilara-J17
Oranchak, David-B53
Ovide, Oriana-B110

Padovano, Martina-B171, H33
Pancha, Nicole-H134
Parchake, Manoj-H105
Parente, Lia-I19
Park, Chan-Seong-D15
Park, Hyun Jin-A128
Parker, Glendon-B56
Parks, Robyn N.-W20, E2, K1
Passalacqua, Nicholas-A31
Peace, Michelle R.-W5

Peer, Michal-A105
Pellegrini, Lavinia-H70
Pelletti, Guido-K13
Perdue, Charla Skinner-E133
Pérez-Flórez, Aurora Marcela-A94
Perkins, Ashley R.-W7
Perlin, Mark-B141, B144, B153, F32
Perrone, Giulio-H78
Philip, Eleena-E87
Plasencia, Enrique-A12
Plourd, Christopher-F4, F13
Plyler, Alexandria-E43, Y7
Podдутури, Varsha-H13
Podini, Daniele-B150
Pokines, James T.-W8
Polhemus, Adam-E127
Pope, Elayne-A171
Pourat, Yasmine-I3
Pozi, Mark-D23
Prada-Tiedemann, Paola-E120
Prahlow, Joseph-H115
Primorac, Dragan-B159
Provost, Eloise-I8
Puracal, Janis C.-W15, F25

Rabah, Ahmad-G25
Radogna, Alessandra-E92
Rais, Muhammad-D47
Ralston, Clara-A42
Ram, Rachel-K38
Ramey, Greg-S3
Ramos, Christopher-H89
Rayes, Omar-W7
Razi, Yasmine-I3
Reciehs, Christina-A85
Reczek, Karen-B51, L2
Redgrave, Anthony-A11
Reilly, Noah-H93
Reisig, Jeff-W15
Renner, Lawrence L.-W18
Resnik, Karissa-K11
Reyes-Rodriguez, Denise-C22
Reynolds, Meredith-H15
Ridel, Alison F.-A101
Rhawi, Wassim-G31
Rim, Sarah-W2
Roberts, Julie-A95
Rocuzzo, Salvatore-I6
Rodriguez Salas, Judith-B199
Rodriguez, Ashley-E123
Rohrer, Charles-H99
Rolland, Matthew-A70
Ropero-Miller, Jeri-E31
Rosenfield, Michael-D22
Ross, Jennifer-I7
Rossetti, Chiara-A57, H80
Rossetto, Ilaria-I21
Rossi, Gianluca-H4
Roux, Claude-F22
Rowe, Walter-B186
AUTHOR FINANCIAL DISCLOSURE

S
Sabatino, Mirella-H84
Sakelladias, Emmanouil-H62
Sanger, Sarah-F11
Santillán, Julienne-A24
Sauerwein, Kelly-G30
Schmid, J.D.-F14
Schwark, Thorsten-H60
Schweighardt, Andrew J.-W15
Schwing, Sarah-A100
Scott, Karen S.-W6
Scotti, Veronica-F31
Seaman Kelly, Jan-J8
Seigfried-Spellar, Kathryn C.-W21
Seki, Yoko-J2
Sensabaugh, George-B81
Sessa, Francesca-E17, E30, F33, H53
Sgheiza, Valerie-A161
Sharma, Meenkashi-H64
Sharma, Vishal-E44, E82, J3
Sharp, Jared-B30
Sharplin, Allison-A91
Shedge, Rutwik-A129
Shi, Chen-C32
Shibasaki, Kazunari-D37
Shnaidman, Vivian C.-W21
Shreve, Christina R.-H7
Siegent, Courtney C.-A90
Sierra-Serrano, Elena-A132
Silverman, Cody-B60
Silvestre, Maria-H23
Simmons, Hannah-S2
Simmons-Ehrhardt, Terrie-A63
Simpson, David-E98
Smith, Cheyenne-B197
Smith, Jeff-C5, C28
Smith, Michael L.-W16
Smith, Rebecca-K12
Solomon, Nadia-H97
Soto Martinez, Miriam-A56
Spence, Jennifer E.-A89
Spiros, Micayla-A1
Stacy, Megan N.-W21
Stanley, Nicole-H73
Stassi, Chiara-H31
Steffen, Carolyn R. “Becky”-W2
Steinberg, Alon-H129
Stevens, Edwin-S3
Stiffelman, Bess-F16
Stolorow, Mark D.-F20
Stout, William-E10
Strasheim, Ariana-A125
Strommer, Ellen-H128
Suddock, Jolee-H40
Sudhakaran, Sncha-C24
Sullivan, Mackenzie-A43

T
Tanaka, Tobin A.-W4
Tang, Larry-W3
Tarozzi, Ilaria-H86
Tawil, Michel-E9
Taylor, Melissa K.-W2
Telegrafo, Michele-H28
Tes, Chiara-A59
Thach, Rasmey-H87
Thali, Michael J.-W12
Tifon Nonis, Bernat-Noël-I4, I5
Tiscione, Nicholas-K35
Torrisi, Marco-H75
Trevino, Joe-S2
Troccolli, Giuseppe-W21
Truver, Michael T.-K52
Tsuchiya, Syun-uke-D39
Tumram, Niles-D31, D34, H124

U
Ubelaker, Douglas H.-W14, A76
Usman, Hafiz Faisal-K15

V
Vallone, Peter M.-W2
Van Buren, Molly-S2
van Rijn, Rick R.-W12
VanBaarle, Alexis-A48
VanLysebettens, Stephanie R.-K29
Vastrick, Dirk-S2
Vastrick, Thomas W.-J9
Veneri, Federico-Y4
Ventura, Mónica-B187
Villarreal, Domingo-W11
Visi, Giacomo-H66
Voll, Jessica-K26

W
Walker, Stewart-E128
Walkup, Taylor-A123
Walraven, Tracy-C20
Walton, Sara-K41
Wang, Ling-K27
Warrier, Varsha-A155
Washington, Thomas-Y2
Waxenbaum, Erin-A4
Weaver, Ryen-A162
Webb, Milad-W7
Weber, Alexis-E88, E114
Weedn, Victor R.-W5, H130
Weimer, BeLinda-E31
Wein, Lawrence-B148
Weiss, Kurt-D20, D26
Wells, Kyla-F6
Wetherbee, Amber-B11
Wetherelt, Deborah-E74
Whitekus, Michael J.-W6
Wiedenmeyer, Emilie L.-A27
Wiersema, Jason M.-H96
Williams, Amanda-A173
Williams, David-G1
Williams, John-A32
Williams, Joyce-B57, E65, E67
Wilson, Emily-A150
Wilson, Linda U.-W9
Wilson, Walter-B213
Winchester, Janis-J24
Winokur, Agnes D.-W5, L2, B127
Winters, Kelsey R.-W3
Wood, Robert E.-G9
Woodall, Karen-E131
Woollen, Katharine-A47

Y
Yarberry, Andrea-B22
Yaroshuk, Timothy-B126
Yim, An-Di-A117
Young, Thomas W.-H6
Yukyi, Nandar-A120

Z
Zadeh, Tanin-A15
Zafereas, Andrea-E27
Zaney, Mary Elizabeth-W5
Zanon, Martina-H101
Zapico, Sara C.-W14
Zhang, Xin-H16
Zhou, Jiemin-H52
Zink, Katherine E.-B132
Ziogos, Sotirios-E60
Zissler, Angela-H122
Zjalic, James-C1
Zumaeta, Edward-K17
# KEY WORD INDEX

## 1

16S rDNA-B46

## 3

3D Fingermarks-F20, F23
3D Modeling-A18
3D Printing-B108, B111
3D Structure-B37
3D Technology-F115

## 4

4-Aminophenol-B113
4K Resolution Microscope-F114

## 7

77 Judicial-CB1

## α

α-PiHP -L59

## A

A549 Cells-L37
AAFS Founding-S4
AAFS Sections-S4
Abdominal Aorta-I54
Abortion-G15
Absorbing and Non-Absorbing Surface-D33
Academy Standards Board-B60
Accessibility-D34
Accident-B118
Accidental-I33
Accidental Drug Overdose-F2
Accidental Homicide-F52
Accountability and Transparency-B150
Accreditation-W25
Accumulated Degree Hours-A43
Accuracy-A64, H16
Activity-B172
Acute Coronary Syndrome-I117
Acute Hemorrhagic Leukoencephalitis-I58
ADA-D34, H21
ADHD-J9, K11
Admissibility-G28, G35
Admissibility Challenges-G33
Adolescent Brain-J21
Adolescent Medicine-I125
Adulterants-L49
Advanced Magnetic Resonance Imaging of the Brain-J26
Adverse Effects-W10, L49

Aesthetic Treatment-F58
AFTE-G23
African American Children-H9
Age-A92
Age Assessment-H15
Age Determination-A89, F23
Age Estimation-A55, A57, A86, A87, A88, C7, C21, H8, H11, H14, Y2
Age Estimation Accuracy-H9
Age Progression-F78
Age-at-Death-A85, Y1
Age-at-Death Estimation-A56
Ageism-I118
Aging-B32
Ainala Skeletal Remains-H6
Alanine-F4
Alarm Garden Gun Cannon-B82
Alcohol Consumption-L10
Alcohol-Related Accidents-L60
Alcoholic-I27
Alcoholism-I55
Algorithm Comparisons-B18
Algorithm for Source Identification-F31
Algorithms-C19, K15, K19
Alkaline Lysis-B43
All-Terrain Vehicle Injury-D18
All Terrain Vehicle Rollover-D18
Allelic Drop-Out-B129
Allelic Variation-Y11
ALS-F99
Alteration-K1
Alternate Ligh Source-W19
Alternative Markers Kit Development-B148
Ambient Ionization Mass Spectrometry (AIMS)-B125
American Revolution-LW2
Americium-241-I71
Amino Acids-Y6
Aminoidanes-B21
Amlodipine-I107
Amphetamine-L33
Anaphylaxis-CB3
Anatomage-C34
Anatomical Abnormalities-I56
Anatomical Variation-Y28
Ancestral-H13
Ancestral Age Estimation-H12
Ancestry Estimation-A98
Ancestry Inference-B102
Ancient Bones-F67
Ancient DNA-F126
Android*-C15
Android® Applications-F102
Animal-F44
Animal Abuse-B100, B101
Animal Model-L19
Animal Scavenging-A33, A115, A125, A126

Anthropological Forensics-A32
Anthropology-W6, A30
Anthropology Education-A19
Antibody Hybridization-B54
Anti-Drug Expert-G35
Anti-Rephlux Surgery-I48
Antisocial Personality Disorder-J26
Anthropometric-A103
Aortoesophageal Fistula-I121
Applicability-IB8A
Aquatic Environments-F106
Arc Melting Mark-D38
Arson-B121
Artificial Intelligence-A77, A82, C28, C30
Artificial Intelligence Technologies-C21
Artificial Neural Networks-D2, H2
ASB-L39
Asian Population-B102
Aspartic Acid Racemization-A55, A85
Asphyxia-I66, F57, J17
Assault Characteristics-E16
Assessment Literacy-F89
Asthma-I103
ASTM-B61
Astrogial-I17
Astroworld-I31
Attention Deficit Hyperactivity Disorder (ADHD)-J22
ATR/FTIR-B56, D33, L12
ATR/FTIR Spectroscopy and Chemometrics-B169
Attempted Suicide-I18
Attraction-Y23, Y24
Atypical Firearms-B82
Augmented Reality-C33
Auricular Surface-Y1
Authentic Hair Reference Material-L64
Authorship Identification-D16
Autoerotic Death-I3
Automated Identification System-K9
Automatic Alignment-F31
Automation-B98, L11
Automotive Paint-B176
Autopsy Findings-I56

Bacterial Tracheitis-I123
Bad Faith-D10
Bad Science-D10
Ballistic Gelatin-B120
Bassistic Trajectory-F14
Ballistics-B23, F115
Band Saw-I14
Barr Body Identification-F121
Bathing-F93
KEY WORD INDEX

Bayes Factors-K12
Bayes’ Theorem-B40, I15
Bayesian-A86
Bayesian Evidence Interpretation-I39, I40
Bayesian Network-G10
Bed Sheets-B11
Bee Sting-CB3
Behavior-J24
Behavioral Science-G38
Benzodiazepines-B155, L2, L31
Best Practice-F38
Best Practices-B167, J10
Bias-W17
Bias Mitigation-F86
Big Data Forensics-C27
Bimodel Separations-B158
Biocultural Data-A27, A32
Biofluid Identification-B45, B46, B47, B48, B89, B104
Body Fluids-F4
Body Fluids-F4
Body Identification-B5, H4
Body Mass Index-A38
Bullet-F11
Bone-A37, B96
Bone Biomolecules-B136
Bone Fractures-A43, C33
Bone Healing-A5
Bone Histology-A70, A71
Bone Lesions-A126
Bone Maceration-B136
Bordetella Bronchiseptica-I123
Brain Impairment-F49
Brain/Head Injuries-I2
Brain Lesions-J26
Breath Aerosols-L36
Brodifacoum-L48
Brugada Syndrome-I26
Bruise-F99
Bruise Age-E11
BTmix Solution With Modified Rinse and Swab-Y21
Bucinnazine-B20
Building Maintenance Code- D34
Burial-I19
Burned Bones-A128
Burned Fragmented Remains-H19
Burned Human Remains-A2
Burned Remains-A1, A26
Burnt Bodies-I94
Burnt Teeth-H5
Butane-Related Death-I72
Button Battery-I121
Cadaver-I87, I91
Cadaver Dogs-F67, G14
Cadmium Toxicity-L24
Caliber-F11
Calliphoridae-I69, I70, I77 I83, L62
Camera Identification-C9
Cannabidiol-B153
Cannabinoids-B88, B113, B157, F60, J24, L7
Cannabidiol-Based Products-L20
Cannabidiol (CBD)-L15, L20
Cannabidiol-Based Products-L20
Cannabinoid Synthase Gene-B140
Cannabis-B112, B119, L36
Cannabis sativa-B92, B99, B140
Capacity-I23
Carbon Dioxide-I112
Carbon Monoxide-I112
Carbon Nanotubes-B107
Carbonization-F68
Cardiac Arrest-I66
Cardiac Arrhythmias-F60
Cardiac Tamponade-I48
Cardiovascular Pathology-W16
Care Homes-E20
Cartridge Case Comparison-Y18
Case Study-I14
Casework-A22, A23
Cause of Death-I23
Cementochronology-A113
Cemetery Management-A121
Centrifugal Microfluidics-B145
Cerebral Palsy-A78
Cerebral Sinovenous Thrombosis-I11
Certification-C5
Cervical Fracture-F17
cfDNA-B56
Challenges-A66
Challenging Samples-B91
Chamber Marks-D9, D13
Changepoint Detection-C20
Checklists-S3
Chemical Imaging-B176
Chemistry-Y14
Chemometrics-B89, F43
Child-F73
Child Abuse-F77, A14, D28, E2
Child Abuse and Neglect-F18
Child Fatalities in Vehicle Rear Crashes-D20
Child Head Injury-D19, D24
Child Maltreatment-I119
Child Sex Ratio-F105
Child Sexual Abuse-G38
Childhood Development-K17
Choring/Hacking Trauma-A8
Choroid Plexus-I11
Christian Cold Case-F50
Chronology-I22
Cigarette-B165
Cirrhosis-I12
Classic Metaphysye Lesion-A14
Classification Systems of Lip Prints-B164
Cleopatra-F69
Clinical Forensic Medicine-F81
Clinical Practice-E14
Clonazepam-L31
Clothing Tone Analysis-C2
Cloud Forensics-C25
CNN-D38
Coagulation Disorders-I12
Cocaine-F54, I73, L46
Cocaine Craving-J11
Cocaine Overdose-J30
CODIS-F51
Cognitive Anthropology-A51
Cognitive Bias-F86, K20
Cold Case Investigation-LW1
Cold Case Resolution-W6
Cold Cases-A112, B133
Collection-B8
Collection Method-B9
Colonization-I70
Color-K23
Color Tests-F46
Combine Harvester-I20
Combined Data-A91
<table>
<thead>
<tr>
<th>KEY WORD INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Death-L17</td>
</tr>
<tr>
<td>Combined Homicide-F73</td>
</tr>
<tr>
<td>Commingled Human Remains-A68, A106</td>
</tr>
<tr>
<td>Commingled Remains-A49, A105</td>
</tr>
<tr>
<td>Commingling-A104</td>
</tr>
<tr>
<td>Communication-G29</td>
</tr>
<tr>
<td>Comparative Medical Radiography-A13</td>
</tr>
<tr>
<td>Comparison-B106</td>
</tr>
<tr>
<td>Compassion Fatigue-E9</td>
</tr>
<tr>
<td>Compensation-G15</td>
</tr>
<tr>
<td>Competencies-A25</td>
</tr>
<tr>
<td>Completeness-A104</td>
</tr>
<tr>
<td>Complex Mixture Interpretation-G11</td>
</tr>
<tr>
<td>Complex Suicide-I67, I6, I7</td>
</tr>
<tr>
<td>Complex Systems-F41</td>
</tr>
<tr>
<td>Compound Identification-D31</td>
</tr>
<tr>
<td>Compression Asphyxia-I31</td>
</tr>
<tr>
<td>Computed Tomography-A17, A84, A101, I62</td>
</tr>
<tr>
<td>Computer Forensics Reference Data Sets (CFReDS)-C22</td>
</tr>
<tr>
<td>Computer Shareware Programs-H10</td>
</tr>
<tr>
<td>Computer Vision-D40, H15</td>
</tr>
<tr>
<td>Concealed-I67</td>
</tr>
<tr>
<td>Cone Beam Computed Tomography (CBCT)-H4</td>
</tr>
<tr>
<td>Confocal Microscope-A1</td>
</tr>
<tr>
<td>Congenital Absence of the Left Circumflex Artery-I51</td>
</tr>
<tr>
<td>Connection-F120</td>
</tr>
<tr>
<td>Connective Tissue Disorder-Y22</td>
</tr>
<tr>
<td>Consensus-Based Standards-W7</td>
</tr>
<tr>
<td>Consensus Body-B60</td>
</tr>
<tr>
<td>Constitution Law-G18</td>
</tr>
<tr>
<td>Contact Traces-B6</td>
</tr>
<tr>
<td>Contraband-B79</td>
</tr>
<tr>
<td>Contribution-F100</td>
</tr>
<tr>
<td>Conversion-B157</td>
</tr>
<tr>
<td>Conviction Integrity-Y13</td>
</tr>
<tr>
<td>Copycat-J28</td>
</tr>
<tr>
<td>Core Curriculum-G30</td>
</tr>
<tr>
<td>Coronary Artery Anomaly-I51</td>
</tr>
<tr>
<td>Corpus Luteum Cyst-I53</td>
</tr>
<tr>
<td>Correct Level of Security Treatment-J31</td>
</tr>
<tr>
<td>Corrections-I9</td>
</tr>
<tr>
<td>Cortical Porosity-A71</td>
</tr>
<tr>
<td>Cosine Similarity-D31</td>
</tr>
<tr>
<td>Cosmetic Products-D29</td>
</tr>
<tr>
<td>Cosmetics-Y5</td>
</tr>
<tr>
<td>Cost Benefit Analysis (CBA)-L63</td>
</tr>
<tr>
<td>Counterfeit Documents-K3</td>
</tr>
<tr>
<td>Counterfeit Drugs-B59</td>
</tr>
<tr>
<td>Counterfeit Stamps-K5</td>
</tr>
<tr>
<td>Court-Y19</td>
</tr>
<tr>
<td>Courtroom-Y20</td>
</tr>
<tr>
<td>Courts-L53, G26</td>
</tr>
<tr>
<td>COVID-19-E9, F1, F13, F55, I25, I58, I60, I91, I100, Y19</td>
</tr>
<tr>
<td>COVID-19 Infection-E20</td>
</tr>
<tr>
<td>COVID-19 Pandemic-F97</td>
</tr>
<tr>
<td>COVID-19 Vaccine-I43</td>
</tr>
<tr>
<td>Crack Babies-F54</td>
</tr>
<tr>
<td>Cranial Macromorphoscopic Data-A97</td>
</tr>
<tr>
<td>Cranial Sutures-A57</td>
</tr>
<tr>
<td>Craniofacial Identification-A15, A77</td>
</tr>
<tr>
<td>Craniofacial Reconstruction and Facial Soft-Tissue Thickness-A21</td>
</tr>
<tr>
<td>Craniofacial Identification-D40</td>
</tr>
<tr>
<td>Craniofacial Superimposition-A15, A77</td>
</tr>
<tr>
<td>Craniometric-A96, A99</td>
</tr>
<tr>
<td>Cremation-F110</td>
</tr>
<tr>
<td>Crime-lite®AUTO-Y7</td>
</tr>
<tr>
<td>Crime Prevention-D30</td>
</tr>
<tr>
<td>Crime Scene Examination-F122</td>
</tr>
<tr>
<td>Crime Scene Investigations-J18</td>
</tr>
<tr>
<td>Criminal Investigations-F51</td>
</tr>
<tr>
<td>Criminal Law-G1</td>
</tr>
<tr>
<td>Criminalistics-Y4</td>
</tr>
<tr>
<td>Criminology-F87</td>
</tr>
<tr>
<td>Creation DNA Database-F51</td>
</tr>
<tr>
<td>Crop-Type-B99</td>
</tr>
<tr>
<td>Cross-Reactivity-L28</td>
</tr>
<tr>
<td>Crossbows-I18</td>
</tr>
<tr>
<td>Crosswalk Violation-D37</td>
</tr>
<tr>
<td>Cruelty-F68</td>
</tr>
<tr>
<td>Cryptographic Techniques-C14</td>
</tr>
<tr>
<td>CSAAS Admissibility-G38</td>
</tr>
<tr>
<td>CSI Effect-Y15</td>
</tr>
<tr>
<td>CT Scans-A16</td>
</tr>
<tr>
<td>CT Scan Study-A65</td>
</tr>
<tr>
<td>Cultural Consensus Analysis-A51</td>
</tr>
<tr>
<td>Currency-B159</td>
</tr>
<tr>
<td>Curriculum-G21</td>
</tr>
<tr>
<td>Cut Mark Characteristics-A8</td>
</tr>
<tr>
<td>Cutaneous Lesions-F45</td>
</tr>
<tr>
<td>Cyber Forensic Investigation-C13</td>
</tr>
<tr>
<td>Cyhalothrin-I106</td>
</tr>
<tr>
<td>CYP2D6-L61</td>
</tr>
<tr>
<td>DAE Quicksheets-H10</td>
</tr>
<tr>
<td>Damaged DNA-B13</td>
</tr>
<tr>
<td>Dangerous Conditions-D39</td>
</tr>
<tr>
<td>DART®-HRMS-B177</td>
</tr>
<tr>
<td>DART®-MS-B29, B76, B111, B114, B152</td>
</tr>
<tr>
<td>Data Privacy-C14</td>
</tr>
<tr>
<td>Data Quality-C28</td>
</tr>
<tr>
<td>Data Science-A114</td>
</tr>
<tr>
<td>Data Verifiction-C17</td>
</tr>
<tr>
<td>Dataset-C23</td>
</tr>
<tr>
<td>Dating Violence-E1</td>
</tr>
<tr>
<td>Daubert-G28</td>
</tr>
<tr>
<td>Daubert/Frye-G33</td>
</tr>
<tr>
<td>Daubert Standard-G22</td>
</tr>
<tr>
<td>Deactivation-F111</td>
</tr>
<tr>
<td>Death-I61</td>
</tr>
<tr>
<td>Death Certificate-F70, I29</td>
</tr>
<tr>
<td>Death in Custody-I72</td>
</tr>
<tr>
<td>Death Investigation-F27</td>
</tr>
<tr>
<td>Deaths-F83</td>
</tr>
<tr>
<td>Decapitation-I9, I20</td>
</tr>
<tr>
<td>Decedent Identification-A82, C31, F108</td>
</tr>
<tr>
<td>Decomposition Process-I79</td>
</tr>
<tr>
<td>Deep Learning-A69, B75, C30, D27, D38, D40, K15</td>
</tr>
<tr>
<td>Deep Learning Algorithms-C7</td>
</tr>
<tr>
<td>Deep Vein Thrombosis-I22</td>
</tr>
<tr>
<td>Degenerative Changes-A68</td>
</tr>
<tr>
<td>Degraded DNA-B93</td>
</tr>
<tr>
<td>Degraded Remains-B137</td>
</tr>
<tr>
<td>Degree of Force-I40</td>
</tr>
<tr>
<td>Delayed Oviposition-I67</td>
</tr>
<tr>
<td>Delphi Method-E12</td>
</tr>
<tr>
<td>Delta 8 THC-B122</td>
</tr>
<tr>
<td>Delta-9-Tetrahydrocannabinol-B112, B153</td>
</tr>
<tr>
<td>Delta 9 THC-B122</td>
</tr>
<tr>
<td>Demographics-I122</td>
</tr>
<tr>
<td>Density Functional Theory (DFT)-B28 Dental Age Assessment-H9</td>
</tr>
<tr>
<td>Dental Age Estimation-H10, H16</td>
</tr>
<tr>
<td>Dental Aging Methods-A59</td>
</tr>
<tr>
<td>Dental Anatomy-H3</td>
</tr>
<tr>
<td>Dental Anthropology-A59</td>
</tr>
<tr>
<td>Dental Comparison-H7</td>
</tr>
<tr>
<td>Dental Development-A86</td>
</tr>
<tr>
<td>Dental Identification-H3</td>
</tr>
<tr>
<td>Derivatization-L26</td>
</tr>
<tr>
<td>Designer Benzodiazepines-L6, L41 Designer Drugs-B155</td>
</tr>
<tr>
<td>Detector Dogs-F47</td>
</tr>
<tr>
<td>DFE-L56</td>
</tr>
<tr>
<td>DFT-L5</td>
</tr>
<tr>
<td>Diagnosis-J20</td>
</tr>
<tr>
<td>Diagonal Path-D8</td>
</tr>
<tr>
<td>Differential Extraction-B39, B41, B42, D32, F9</td>
</tr>
<tr>
<td>Digital Analysis-C3</td>
</tr>
<tr>
<td>Digital and Multimedia Forensic Sciences-C30</td>
</tr>
<tr>
<td>Digital Bone Loss-A84</td>
</tr>
<tr>
<td>Digital Data Sets-C22</td>
</tr>
<tr>
<td>Digital Database-Y17</td>
</tr>
<tr>
<td>Digital Evidence-C9, C11, C17, C20, C26, C29</td>
</tr>
</tbody>
</table>
KEY WORD INDEX

Digital Forensics-C12, C16, C22, C23, C25, C26
Digital Forensics and Incident Response Systems-C27
Digital PCR-B142
Digitally Captured Signatures-K20
Dimethoate-L38
Diptera-Y23, Y24
Direct Analysis in Real Time (DART®)-D3
Direct and Fast PCR-B15
Direct PCR-B8
Disaster Victim Identification-C32, F36
Disclosure-G32
Dismemberment-A3, A9, I85
Disorganized Criminal Behavior-J11
Discretion-CB1
Dissection-W16
Dissociation-J5
Distracted Driving-G12
Diversity-W5
DNA-W17, B49, B55, B147, E19, F27, F109, G9, G16, I77, LW3, LW4
DNA Analysis- B39, B126, B127, B150 DNA and Soil Analyses-F136
DNA Backlog-B149
DNA Barcoding-B141
DNA Collection-B58
DNA Collection and Extraction-B56
DNA Database-B59, B134, G8, I47
DNA Degradation-B146
DNA Extraction-B90, B96
DNA IQTM-B16
DNA Methylation Markers-B104
DNA Metabarcoding-B95
DNA Mixture-B12, B52, D32
DNA Mixture Interpretation-B53
DNA Phenotyping-Y3
DNA Prevalence-W4
DNA Recovery-B16, B97
DNA Shedding Propensity-B6
DNA Sperm-F9
DNA Testing-G8
DNA Transfer-W4, W14, B6
Domestic Violence-I13, I118
Donepezil-L18
Dr. Cop-G34
Driving-L57
Driving Under the Influence-L22, L59
Drowning-A35, F6, F42, F93, I106
Drub Abuse-J29, L13
Drug and Alcohol Detection-F26
Drug Biomarker-L26
Drug Identification-B116, B178
Drug Intoxication-F18
Drug Profiling-F48
Drug Recognition Expert-G34
Drug Stability-L22
Drug Testing-L55
Drug Trends-B159
Drug-Hair Binding Studies-L64
Drug-Related-F83
Drug Use-L10
Drugs-F45, F46, F101, L57
DSM-5-TR-J20
DTT-B5
Dual Mode Separations-Y8
Duct Tape-B19
DU1-G19, L56
DU1/DUID-G34, L54
DVI-H1
DVI-G19

E

Ear Photograph and Ear Print-C6
E-Cigarettes-B153
ECHRG16
Edibles-Y10
eDNA-B95
EDR Data-D23
Education-B143, C34, F33, I92
Ehlers Danlos Syndrom-Y22
El Fragmentation-B22
Elder Abuse-A4, I118
Elderly Neglect-F124, H18
Elderly Victims-E8
Electrical-D35
Electrical Marks-I3
Electrochemistry-B178
Electrocution- D35, I3
Elemental Analysis-B171
ELISA-L28
E-Liquid Ingestion-L27
Emboli and Thrombosis-I125, I71
Emerging Drug Threats-W26
Empirical Study-Y20
Employee Retention-F84
Empty Puparia-L52
Endochondral Ossification-A87
Enforced Disappearance-F106
Entheses-A94
Entomology-I77, I78, I80, I85
Environment-B143
Environmental Degradation-F61
Environmental DNA (eDNA)-Y12
Environmental Forensics-Y12
Enzymatic-F4
Ephedra-Y4
Epigenetic Sample Preparation-B145
Epigenetics-B143
Epilepsy-I23
Epithelioid Angiosarcoma-I54
Equity and Inclusion-W5
Error Rates-B18
E-Scooter Accidents-I35
Ethanol-L9
Ethical Competency-F87
Ethics-W9, G40
Ethics Committee-F13
Ethnic DAE-H12
Etodesnitazene-L46
Ettore Majorana-LW1
EU Regulations-F111
Eugenics-LW5
European Convention on Human Rights (ECHR)-G17
European Court of Human Rights (ECtHR)-G17
Evaluative Reporting-B57
Evidence-G28, H22
Evidence Expectations-Y15
Evidence Identification-B78
Evidence Recovery-Y11
Evidentiary Value-B74
Exact Convolution-B17
Examination-G25
Exoneration-Y13
Expanding Projectile-F14
Experimental Case Studies-W18
Expert Testimony-G13, G31, G40, J5
Expert Witness-W9, W23, G37, J23
Expertise-A74
Exhaled Breath DNA-B4
Explainability-K9
Explosives-B26, B62, B81, F65
Extraction-L19
Extractor-Marks/Gyroscopic Motion-D9
Extrajudicial Execution Cases-I36
Extreme Climate-A124
Eyeglasses-B10

F

FAAS-L24
Facial Anatomy-F66
Facial Comparison-LW1
Facial Identification-C5
Facial Recognition-C5, C19
Facial Reconstruction-A20
Facial Soft Tissue Depth-A83
FADAMA-A53
Failure-D36
Failure Analysis-B78
Failure Analysis-D7
Fall From Height-D4
False Allegation-F80
Family Massacres-J8
Fast Blue BB-B119
Fat Emboli Syndrome-I57
Fat Overload Syndrome-I104
Fatal Injuries-I30
<table>
<thead>
<tr>
<th>KEY WORD INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatalities-F1</td>
</tr>
<tr>
<td>Fatigue-F122</td>
</tr>
<tr>
<td>Fatty Acids Profiling-F24</td>
</tr>
<tr>
<td>Fauna-F130</td>
</tr>
<tr>
<td>Favorable Information-G32</td>
</tr>
<tr>
<td>FB8B-L35</td>
</tr>
<tr>
<td>Fear of Crime-D30</td>
</tr>
<tr>
<td>Fecal Contamination-B142</td>
</tr>
<tr>
<td>Feet-F27</td>
</tr>
<tr>
<td>Fellowship-A22</td>
</tr>
<tr>
<td>Female Feticide-F105</td>
</tr>
<tr>
<td>Female Homicide-I32</td>
</tr>
<tr>
<td>Female Violence-F79</td>
</tr>
<tr>
<td>Femicide-I10, I32</td>
</tr>
<tr>
<td>Fentanyl-L45</td>
</tr>
<tr>
<td>Fentanyl-B85, B159, B161, L3 L8, L11, L21, L29, L52</td>
</tr>
<tr>
<td>Fentanyl Analogs-B22, B84, L5</td>
</tr>
<tr>
<td>Fetal Alcohol Spectrum Disorder (FASD)-F49</td>
</tr>
<tr>
<td>FG-G9, LW4</td>
</tr>
<tr>
<td>Fiber Analysis-B27, D3</td>
</tr>
<tr>
<td>Field Drug Analysis-D12</td>
</tr>
<tr>
<td>Field Sampling-B24</td>
</tr>
<tr>
<td>Fingerprint-B32, B169, D29</td>
</tr>
<tr>
<td>Fingermarks-B55</td>
</tr>
<tr>
<td>Fingerprints-B166, B167</td>
</tr>
<tr>
<td>Fingerprints-L51, F21, F24, Y14</td>
</tr>
<tr>
<td>Finite Element-D7</td>
</tr>
<tr>
<td>Fire-A45</td>
</tr>
<tr>
<td>Fire Classification-A2</td>
</tr>
<tr>
<td>Fire Debris-B76, D5</td>
</tr>
<tr>
<td>Fire Debris Analysis-B74, B75, B107</td>
</tr>
<tr>
<td>Fire Investigation-Y7</td>
</tr>
<tr>
<td>Firearm-G25, B118</td>
</tr>
<tr>
<td>Firearm Toolmarks-B77</td>
</tr>
<tr>
<td>Firearms-B57, F111, F115, I1</td>
</tr>
<tr>
<td>Firearms and Toolmarks-B60, Y18</td>
</tr>
<tr>
<td>Firearms Examination-F114</td>
</tr>
<tr>
<td>Firearms Identification-B18</td>
</tr>
<tr>
<td>Firearm Toolmarks Limitations-G24</td>
</tr>
<tr>
<td>Fired Cartridge Casings-Y21</td>
</tr>
<tr>
<td>Flubromazepam-F53</td>
</tr>
<tr>
<td>Fluorescent Labeling-A70</td>
</tr>
<tr>
<td>Flow Cytometry-B54</td>
</tr>
<tr>
<td>Fluvial Environment-A127</td>
</tr>
<tr>
<td>Fly Larvae-B138</td>
</tr>
<tr>
<td>Flying Forensic Nursing-E10</td>
</tr>
<tr>
<td>Follicular Lymphoma-I49</td>
</tr>
<tr>
<td>Font Identification-K10</td>
</tr>
<tr>
<td>Footwear Evidence-F29</td>
</tr>
<tr>
<td>Forced Disappearance-F95</td>
</tr>
<tr>
<td>FORDISC®-3.1-A73, A130</td>
</tr>
<tr>
<td>Foetus-F54</td>
</tr>
<tr>
<td>Forced Disappearance-F95</td>
</tr>
<tr>
<td>Foreign Body Ingestion-I121</td>
</tr>
<tr>
<td>Forensic-E15, F126, I92</td>
</tr>
<tr>
<td>Forensic/Non-Forensic-A75</td>
</tr>
<tr>
<td>Forensic Archaeology-Casework-A24</td>
</tr>
<tr>
<td>Forensic Art-F66</td>
</tr>
<tr>
<td>Forensic Artifact-C10</td>
</tr>
<tr>
<td>Forensic Autopsies-I30</td>
</tr>
<tr>
<td>Forensic Autopsy-I119</td>
</tr>
<tr>
<td>Forensic Biology-B38</td>
</tr>
<tr>
<td>Forensic Biology-DNA-G11</td>
</tr>
<tr>
<td>Forensic Botany-F132</td>
</tr>
<tr>
<td>Forensic Capacity Building-A28</td>
</tr>
<tr>
<td>Forensic Case-E3</td>
</tr>
<tr>
<td>Forensic Computational Linguistics-D16</td>
</tr>
<tr>
<td>Forensic Dentistry-H17</td>
</tr>
<tr>
<td>Forensic DNA-B14, B38, B93, B137</td>
</tr>
<tr>
<td>Forensic DNA Analysis-B15, B91, D1</td>
</tr>
<tr>
<td>Forensic DNA Applications-B105</td>
</tr>
<tr>
<td>Forensic DNA Laboratory-B144</td>
</tr>
<tr>
<td>Forensic DNA Testimony and Reporting-W4</td>
</tr>
<tr>
<td>Forensic Document Examination-K1, K5, K6, K8, K11, K14, K21</td>
</tr>
<tr>
<td>Forensic Education-G6</td>
</tr>
<tr>
<td>Forensic Engineering-E17</td>
</tr>
<tr>
<td>Forensic Entomology-B138, F72, I67, I68, I69, I70, I81, I82, I83, I84, I85</td>
</tr>
<tr>
<td>Forensic Entomotoxicology-L62</td>
</tr>
<tr>
<td>Forensic Epigenetics-B145, D1</td>
</tr>
<tr>
<td>Forensic Evaluation-B172, J10</td>
</tr>
<tr>
<td>Forensic Evidence-E6, G21</td>
</tr>
<tr>
<td>Forensic Facial Reconstruction-F66</td>
</tr>
<tr>
<td>Forensic Genealogy-B95, F108</td>
</tr>
<tr>
<td>Forensic Genetic Genealogy-W21, A79, G8</td>
</tr>
<tr>
<td>Forensic Genetics-B14, B133, Y3</td>
</tr>
<tr>
<td>Forensic Glass Analysis-B109</td>
</tr>
<tr>
<td>Forensic Hair Reference Material-L64</td>
</tr>
<tr>
<td>Forensic Handwriting-K11</td>
</tr>
<tr>
<td>Forensic Humanitarian Anthropology-A28</td>
</tr>
<tr>
<td>Forensic Identification-W6</td>
</tr>
<tr>
<td>Forensic Investigation-C21, F24, I43, I87, I120</td>
</tr>
<tr>
<td>Forensic Investigative Genetic Genealogy-W21</td>
</tr>
<tr>
<td>Forensic Laboratories-W24, F41</td>
</tr>
<tr>
<td>Forensic Medicine-E14, J6, J8</td>
</tr>
<tr>
<td>Forensic Network-E10</td>
</tr>
<tr>
<td>Forensic Nursing-E4, E5, E6, E13, E17, E19</td>
</tr>
<tr>
<td>Forensic Nursing Certification-E13</td>
</tr>
<tr>
<td>Forensic Nursing Certification Board-E13</td>
</tr>
<tr>
<td>Forensic Nursing Core Competencies-E12</td>
</tr>
<tr>
<td>Forensic Nursing Education-E12</td>
</tr>
<tr>
<td>Forensic Odontology-A59, D25, H1, H4, H8, H14</td>
</tr>
<tr>
<td>Forensic Pathologist-F35, I34</td>
</tr>
<tr>
<td>Forensic Plant Science-B92</td>
</tr>
<tr>
<td>Forensic Podiatry-F28</td>
</tr>
<tr>
<td>Forensic Provenance-A48, A109, H5</td>
</tr>
<tr>
<td>Forensic Proteomics-F127</td>
</tr>
<tr>
<td>Forensic Psychiatric Evaluation-J13</td>
</tr>
<tr>
<td>Forensic Psychiatry-W9, G37, J4</td>
</tr>
<tr>
<td>Forensic Radiology-W3, F7</td>
</tr>
<tr>
<td>Forensic Science-W7, A114, B21, B64, B129, B130, E5, F28, F131, G1</td>
</tr>
<tr>
<td>Forensic Science Commission-G24</td>
</tr>
<tr>
<td>Forensic Science Education-W1, F89</td>
</tr>
<tr>
<td>Forensic Science Library-F32</td>
</tr>
<tr>
<td>Forensic Science Practice-B69, B70</td>
</tr>
<tr>
<td>Forensic Science Principles-B69, B70</td>
</tr>
<tr>
<td>Forensic Sciences-CB3, B7, F69, F124, F130, F132, G10, H18, I10, I63, I102, I112, I125, J2, J28</td>
</tr>
<tr>
<td>Forensic Settings-J31</td>
</tr>
<tr>
<td>Forensic Statistics-K16</td>
</tr>
<tr>
<td>Forensic Taphonomy-W8, A125, A128, A129</td>
</tr>
<tr>
<td>Forensic Testimony-Y20</td>
</tr>
<tr>
<td>Forensic Testing-D11</td>
</tr>
<tr>
<td>Forensic Text Analysis-D14</td>
</tr>
<tr>
<td>Forensic Tool Testing-C25</td>
</tr>
<tr>
<td>Forensic Toxicological Analysis-L14</td>
</tr>
<tr>
<td>Forensic Toxicology-I72, L51, L60</td>
</tr>
<tr>
<td>Forensic Workflows-W26</td>
</tr>
<tr>
<td>Forensics-S1, F44, F62, G30</td>
</tr>
<tr>
<td>Forensics-Firearm-B78</td>
</tr>
<tr>
<td>Four-Field Anthropology-A28</td>
</tr>
<tr>
<td>Four-Field Methodology-A30</td>
</tr>
<tr>
<td>Fractography-A42</td>
</tr>
<tr>
<td>Fracture Analysis-J17</td>
</tr>
<tr>
<td>Fracture Patterns-A4</td>
</tr>
<tr>
<td>Fragmentation Pathways-B115</td>
</tr>
<tr>
<td>Fraud-K5</td>
</tr>
<tr>
<td>French Criminal Law-G22</td>
</tr>
<tr>
<td>Friction Ridge-B63</td>
</tr>
<tr>
<td>Frustrated Suicide-J12</td>
</tr>
<tr>
<td>FTIR Microscopy-B176</td>
</tr>
<tr>
<td>Full-Face Helmet-I9</td>
</tr>
<tr>
<td>Fulminant-I57</td>
</tr>
</tbody>
</table>

**G**

| Gaming-J14 |
| Gargano Mafia-I37 |
| Gas Chromatography/Mass Spectrometry (GC/MS)-B125 |
| Gas Chromatography/Electron Ionization/ Mass Spectrometry (GC/EI/MS)-B25, B116 |
KEY WORD INDEX

Individual Features of Lip Prints-B164
Infant-F19
Infant Mortality-I124
Infants-I100
Information Dissemination-W1
Infrared CCTV-C2
Infrared Light-W19
Infrastructure-F40
Initial Insect Arrival-I81
Injury-D35, I116
Injury Analysis-D23
Injury Biomechanics-D22
Injury Risk-D28
Ink-K23
Inks-D26
Innocence-LS3, G26
Innocence Projects-Y13
Innovation-E17
Inorganic Explosives-B80
Insanity-J5
Insanity Defense-Y27
Insertion Deletion Polymorphisms (INDEL)-B148
Insight-J23
Insufflation-I50
Interference-L56
Interference Studies-L15
Inter-Laboratory Study-B67, B112
Inter-Laboratory Variation-B52
Interlandmark Distance-A62
Internal Gaze Wound-I1
International-F98
International Law-F117
International Reference Data Set-H12
Internships-F33
Interpretation of DNA Mixture-G18
INTERPOL-F109
Interrater Reliability-A2
Intimate Partner Violence-E1, F94, I13
Intoxication-F53, I107, I109, I107, J14
Intrauterine Fetal Death-I120
Intravenous Lipid Emulsion-I104
Investigations-S2, C24, D2, F38, F62, F94, G10, I61
Investigative Genetic Genealogy-W21
Ion Mobility Spectrometer-B154
iOS® Forensics-C12
iPhone® Forensics-G12
IR Photography-F8
IR Spectroscopy-K3
Iris Recognition-I97
ISO Accreditation-F39
Isooles-B128
Isotope Identification-B151
Isotope Analysis-A48
Istanbul Convention-E10
Istanbul Protocol-F81
J
Jail-F119
Judges and Attorneys-G5
Judicial Misconduct-CB1
Jurisdictional Authority-I46
Jurisprudence-W25, G13
Juror Decision-Making-G31
Jurors-Y15
Jury-C29
Juvenile-A90, A102, Y2
Juvenile Deaths-F76
K
Katana-F5
Kidney-I27
Kinship Calculations-F15
Kinship Inference-B51
Knowledge of Evolution-A19
Known Writing Samples-K18
Korean-A84
Kratom-B141
L
LA-ICP/MS-B109
Laboratory Survey-L40
Ladder Evidence-LS1
Lands and Grooves-F113
Language-A72
Large-F44
Laser Ablation-B24, B109
Laser Scanning Confocal Microscopy-A70
Laser Measuring Device-A103
Latent Fingerprint-B165, B166
Latent Print Evidence-G31
Lateral and Traumatic Injuries-I93
Law Enforcement-F131
Lawyers-C29, G6
LC/MS/MS-MS-B7
LC/MS/LC-MS-L2, L6, L18, L45
Leadless Intracardiac Pacemaker-I52
Lectins-L37
Legal-G1
Legal Medicine Recommendations-J16
Legal Proceedings-G2
Legislation-F110
Lemmatization-D14
LIBS-A49, B162
Likelihood Ratio-W20, B78, C20
Lime Sulfur-I105
Limited Access Environment-I80
Lindbergh-LW5
Linear Sequential Unmasking-B74
Linguistic Evidence-D14, D15
Lip Prints-B164, B168
Literatura de Cordel-LS2
Literature-F32
Liver-I55
Long COVID-F129
Low Copy Number-B13
Low-Template DNA-B4
LSD-B156
Lung-I50
Lycorma Delicatula-Y12
M
Maceration-A26
Machine Learning-A83, B171, E11, L12
Machine Learning Algorithm-A63
Macromorphoscopic-A99
Macromorphoscopic Traits-A95
Mafia Murders-I37
Magnetism-W2
Male Victimization-I13
Maltreatment-F124, H18
Malware-C15
Mammalian Hair-Y17
Management of the Dead-F82
Manner of Death-I14, L47
Marijuana/Cannabis sativa-B87
Mass Fatality Event-I31
Mass Identification-B144
Mass Murder-J3
Mass Spectral Trends-B25
Mass Spectrometry-B83, B84, B117, D26, D31, F61, F65, Y10, Y14
Mastoid Triangle-A65
Matching-B37
MDI Core Data Elements-F35
Measure-I116
Mechanical Asphyxia-I4
Mechanics of All-Terrain Vehicle Injury-D18
Medical Education-F77
Medical Ethics-F116
Medical Evidence-G27, LW5
Medical Examiner-I38
Medical Examiner and Coroner Offices-F96, I41, L53
Medical Examiner’s Office-A22
Medical Liability-F77
Medical Malpractice-E20, F75
Medically Assisted Procreation-F116
Medicolegal-F74, F107, G7
Medicolegal Community-A23
Medicolegal Death Investigation-F35, F36, I42, I82
Memory Forensics-C15
Mental Illness-I29
Mentoring-E15
Meta Analysis-Y4
Metabolism-L43
<table>
<thead>
<tr>
<th>Keyword</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metabolomics</td>
<td>A37, I65, I66, I90, I113</td>
</tr>
<tr>
<td>Metadata</td>
<td>C24</td>
</tr>
<tr>
<td>Metal Detector</td>
<td>F3</td>
</tr>
<tr>
<td>Metal Ion Complexation</td>
<td>B35</td>
</tr>
<tr>
<td>Metals</td>
<td>B108</td>
</tr>
<tr>
<td>Metformin</td>
<td>I109</td>
</tr>
<tr>
<td>Methaemoglobinaemia</td>
<td>I103</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>I111, L33</td>
</tr>
<tr>
<td>Methamphetamine-Detox</td>
<td>F118, L25</td>
</tr>
<tr>
<td>Method Development</td>
<td>Y14</td>
</tr>
<tr>
<td>Method Validation</td>
<td>A39</td>
</tr>
<tr>
<td>Methods</td>
<td>Y1</td>
</tr>
<tr>
<td>Microbial Evidence Storage</td>
<td>B46</td>
</tr>
<tr>
<td>Microbial Signatures</td>
<td>I87</td>
</tr>
<tr>
<td>Microbiology</td>
<td>I89</td>
</tr>
<tr>
<td>Microbiome</td>
<td>B32, B5</td>
</tr>
<tr>
<td>Micro-Computed Tomography</td>
<td>A69</td>
</tr>
<tr>
<td>Micro-CT</td>
<td>H5, I93, I96</td>
</tr>
<tr>
<td>Microfluidic Device</td>
<td>B103</td>
</tr>
<tr>
<td>Microfluidics</td>
<td>B48, D1, D26</td>
</tr>
<tr>
<td>Microglial</td>
<td>I17</td>
</tr>
<tr>
<td>Microgravity</td>
<td>I46</td>
</tr>
<tr>
<td>Microhaplotypes</td>
<td>B50, B139</td>
</tr>
<tr>
<td>Micromorphoscopic</td>
<td>A96</td>
</tr>
<tr>
<td>MicroRNA</td>
<td>B47</td>
</tr>
<tr>
<td>Microscopy</td>
<td>B174, B175</td>
</tr>
<tr>
<td>Microspectrophotometry</td>
<td>B27, B36</td>
</tr>
<tr>
<td>Microwave</td>
<td>B15</td>
</tr>
<tr>
<td>Middle Meningeal Artery</td>
<td>I24</td>
</tr>
<tr>
<td>Migrant Identification</td>
<td>A110</td>
</tr>
<tr>
<td>Migrants</td>
<td>F82</td>
</tr>
<tr>
<td>Migration</td>
<td>A111, F55</td>
</tr>
<tr>
<td>Mimic</td>
<td>B161</td>
</tr>
<tr>
<td>MiRNA</td>
<td>B47</td>
</tr>
<tr>
<td>Misinformation</td>
<td>J19</td>
</tr>
<tr>
<td>Missing Children</td>
<td>F78</td>
</tr>
<tr>
<td>Missing Persons</td>
<td>A79, B51, D6, F109</td>
</tr>
<tr>
<td>Mitochondrial DNA</td>
<td>B100, B101, B131</td>
</tr>
<tr>
<td>Mitragyna Speciosa</td>
<td>B141</td>
</tr>
<tr>
<td>Mixture Deconvolution</td>
<td>B50</td>
</tr>
<tr>
<td>Mixture Interpretation</td>
<td>B52</td>
</tr>
<tr>
<td>Mixture Validation</td>
<td>B17</td>
</tr>
<tr>
<td>Mobbing</td>
<td>J6</td>
</tr>
<tr>
<td>Mobile Forensic</td>
<td>C10</td>
</tr>
<tr>
<td>Modified Discrete Cosine Transform (MDCT)</td>
<td>C1</td>
</tr>
<tr>
<td>Molecular Autopsy</td>
<td>I26, I98</td>
</tr>
<tr>
<td>Molecular Dynamics Simulations</td>
<td>L34</td>
</tr>
<tr>
<td>Morphine Toxicity</td>
<td>I110</td>
</tr>
<tr>
<td>Morphological Analysis</td>
<td>C2</td>
</tr>
<tr>
<td>Morphological Evaluation</td>
<td>A81</td>
</tr>
<tr>
<td>Mortality</td>
<td>F96</td>
</tr>
<tr>
<td>Mortality Meeting</td>
<td>I34</td>
</tr>
<tr>
<td>Motor Oil</td>
<td>Y23</td>
</tr>
<tr>
<td>Motor Vehicle Accidents</td>
<td>I30</td>
</tr>
<tr>
<td>Motor Vehicle Negligence</td>
<td>D39</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>I9</td>
</tr>
<tr>
<td>Mounting Medium</td>
<td>B27</td>
</tr>
<tr>
<td>MRNA</td>
<td>B48</td>
</tr>
<tr>
<td>MS/MS Fragmentation</td>
<td>B35</td>
</tr>
<tr>
<td>MtDNA</td>
<td>B94</td>
</tr>
<tr>
<td>MTSU Outdoor Forensic Facility</td>
<td>A119</td>
</tr>
<tr>
<td>Multi-Stage Mass Spectrometry</td>
<td>B115</td>
</tr>
<tr>
<td>Multidisciplinary</td>
<td>F74</td>
</tr>
<tr>
<td>Multidisciplinary Approach</td>
<td>F50, F56, I7</td>
</tr>
<tr>
<td>Multidisciplinary Research</td>
<td>W18</td>
</tr>
<tr>
<td>Multimedia Stream Hashing</td>
<td>C8</td>
</tr>
<tr>
<td>Multinational Victims</td>
<td>C32</td>
</tr>
<tr>
<td>Multiple Gunshot Injuries to the Head</td>
<td>I5</td>
</tr>
<tr>
<td>Multiple-Perpetrator Rape</td>
<td>F123</td>
</tr>
<tr>
<td>Multiplex PCR</td>
<td>B100</td>
</tr>
<tr>
<td>Multivariate Analysis</td>
<td>C117, L12</td>
</tr>
<tr>
<td>Multivariate Linear Regression Model</td>
<td>B116</td>
</tr>
<tr>
<td>Multivariate Statistical Analysis</td>
<td>B177</td>
</tr>
<tr>
<td>Multivariate Statistics</td>
<td>B86</td>
</tr>
<tr>
<td>Mummification</td>
<td>A36</td>
</tr>
<tr>
<td>Münchausen Syndrome by Proxy</td>
<td>J16</td>
</tr>
<tr>
<td>Murder</td>
<td>F5, F68, F73, I7, J28</td>
</tr>
<tr>
<td>Murder Drug Dependent Victorimeter</td>
<td>J11</td>
</tr>
<tr>
<td>Murfreesboro</td>
<td>A119</td>
</tr>
<tr>
<td>Muzzle-to-Target Distance</td>
<td>F8, F112</td>
</tr>
<tr>
<td>Myocardial Ischemia</td>
<td>I51</td>
</tr>
<tr>
<td>Myocarditis</td>
<td>I25, I60</td>
</tr>
<tr>
<td>Myointimal Hyperplasia</td>
<td>I117</td>
</tr>
<tr>
<td>N-methyltransferase</td>
<td>L33</td>
</tr>
<tr>
<td>N-propanol</td>
<td>L51</td>
</tr>
<tr>
<td>Nail Gun</td>
<td>I2</td>
</tr>
<tr>
<td>NamUs</td>
<td>A110</td>
</tr>
<tr>
<td>Nanogram Detection</td>
<td>B154</td>
</tr>
<tr>
<td>National Center on Forensics</td>
<td>B68</td>
</tr>
<tr>
<td>Natural</td>
<td>I123</td>
</tr>
<tr>
<td>Natural Death</td>
<td>I76</td>
</tr>
<tr>
<td>Natural Variation</td>
<td>K13</td>
</tr>
<tr>
<td>Necrophagous Fly Composition</td>
<td>I86</td>
</tr>
<tr>
<td>Neural Networks</td>
<td>B174</td>
</tr>
<tr>
<td>Neuroimaging</td>
<td>Y27</td>
</tr>
<tr>
<td>New Mexico Decedent Image Database</td>
<td>A6</td>
</tr>
<tr>
<td>Newborn</td>
<td>I124</td>
</tr>
<tr>
<td>Next Generation Sequencing</td>
<td>A130, B91, B94, B98, B105, B126, B127, B128, B130, B131, B132, D32, Y3</td>
</tr>
<tr>
<td>Next Generation Sequencing and Whole Exome Sequencing</td>
<td>I101</td>
</tr>
<tr>
<td>New Psychoactive Substances</td>
<td>L14, L43</td>
</tr>
<tr>
<td>New to Forensics</td>
<td>H1</td>
</tr>
<tr>
<td>NFLIS</td>
<td>L40</td>
</tr>
<tr>
<td>NFLIS-Tox</td>
<td>L40</td>
</tr>
<tr>
<td>NGS</td>
<td>B93</td>
</tr>
<tr>
<td>Nicotine Intoxication</td>
<td>L27</td>
</tr>
<tr>
<td>NII</td>
<td>B68, F90</td>
</tr>
<tr>
<td>Nile Red</td>
<td>B58</td>
</tr>
<tr>
<td>NST</td>
<td>B66</td>
</tr>
<tr>
<td>Nitazenes</td>
<td>L23, L44</td>
</tr>
<tr>
<td>Nitrate Suicide</td>
<td>L25</td>
</tr>
<tr>
<td>Nitrogen Inhalation</td>
<td>J25</td>
</tr>
<tr>
<td>Non-Fatal Strangulation</td>
<td>E21, F94</td>
</tr>
<tr>
<td>Non-Forensic Research Areas</td>
<td>B39</td>
</tr>
<tr>
<td>Non-Linear Regression</td>
<td>A102</td>
</tr>
<tr>
<td>Non-Invasive Sensing</td>
<td>F26</td>
</tr>
<tr>
<td>North Dakota</td>
<td>I79</td>
</tr>
<tr>
<td>Not Guilty by Reason of Insanity</td>
<td>J3</td>
</tr>
<tr>
<td>Note</td>
<td>F12</td>
</tr>
<tr>
<td>Novel Psychoactive Substances</td>
<td>B25, L23, L58, L59, Y16, Y29</td>
</tr>
<tr>
<td>Novel Synthetic Opioids</td>
<td>L42</td>
</tr>
<tr>
<td>NPS</td>
<td>L41</td>
</tr>
<tr>
<td>NSO</td>
<td>B20, L19</td>
</tr>
<tr>
<td>Nurses</td>
<td>E2, E15</td>
</tr>
<tr>
<td>Nursing</td>
<td>E3</td>
</tr>
</tbody>
</table>

**O**

<table>
<thead>
<tr>
<th>Keyword</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Accidents</td>
<td>F129</td>
</tr>
<tr>
<td>Occupational Safety</td>
<td>I4</td>
</tr>
<tr>
<td>Odontological Sex Determination</td>
<td>H2</td>
</tr>
<tr>
<td>Officers of the Court</td>
<td>G5</td>
</tr>
<tr>
<td>Older Couple</td>
<td>I17</td>
</tr>
<tr>
<td>Omics</td>
<td>B136</td>
</tr>
<tr>
<td>Omnibus Tests</td>
<td>A100</td>
</tr>
<tr>
<td>On-the-Job</td>
<td>I33</td>
</tr>
<tr>
<td>Ontology</td>
<td>C23</td>
</tr>
<tr>
<td>Open Access</td>
<td>F32</td>
</tr>
<tr>
<td>Open-Source</td>
<td>C17</td>
</tr>
<tr>
<td>Open Source Intelligence (OSINT)</td>
<td>C11, C13</td>
</tr>
<tr>
<td>Opinions</td>
<td>K8</td>
</tr>
<tr>
<td>Opioid Epidemic</td>
<td>F97</td>
</tr>
<tr>
<td>Opioid Receptors</td>
<td>L34</td>
</tr>
<tr>
<td>Opioid Use</td>
<td>A5</td>
</tr>
<tr>
<td>Opioids</td>
<td>W26, D12, L16</td>
</tr>
<tr>
<td>Optical Trapping</td>
<td>B103</td>
</tr>
<tr>
<td>Optimization</td>
<td>F20</td>
</tr>
<tr>
<td>Oral and Maxillofacial Radiology</td>
<td>H3</td>
</tr>
<tr>
<td>Oral Fluid</td>
<td>L7, L35</td>
</tr>
<tr>
<td>Oral Pathological Conditions</td>
<td>B168</td>
</tr>
<tr>
<td>Organ Weights</td>
<td>I28</td>
</tr>
<tr>
<td>Organic Contaminants</td>
<td>B160</td>
</tr>
<tr>
<td>Organic Explosives</td>
<td>B80</td>
</tr>
<tr>
<td>Organic Peroxides</td>
<td>F133</td>
</tr>
<tr>
<td>Organophosphate</td>
<td>L38</td>
</tr>
<tr>
<td>OSAC-A50, B61, B63, F37, F47, F92, G2, G4, H21, L39</td>
<td></td>
</tr>
<tr>
<td>OSAC Proposed Standard</td>
<td>B67</td>
</tr>
<tr>
<td>OSAC Registry Implementation</td>
<td>G3</td>
</tr>
<tr>
<td>OSINT-C11</td>
<td></td>
</tr>
</tbody>
</table>
KEY WORD INDEX

Ossification-A89
Osteometric Board-A103
Osteometric Sorting-A68
Osteometrics-A94, Y2
Outer Body of the Cartridge Case-D13
Overdose-L21, L44, L53, L65, L104, Y25
Overdose Prediction Tool-F2
Overdose Surveillance-F2
Overdose Trends-F97
Overkilling-I10
Oviposition-F103
Oxycodone-L16, L61

P
P30-F9
Paint-B36
Paint Thinner-B29
Pair Matching-A106
Palaeogenomics-F126
Palo Monte-A75
Pandemic-F135
Panel Discussion-K8
Paper-Spray Mass Spectrometry-F46
Para-Fluorofentanyl-L3, L21
Paranasal Sinuses-A81
Paraphilia-J18
Parental Alienation Relational Problem-J20
Parental Alienation Theory-J19
Partial DNA Profile-D2
Particle Tracking-D6
Pathological Impulsivity-J22
Pathology-F6, I76, I113
Patterns of Death-I119
PC-PNDT Act-F105
PCR Multiplex-B101
Pedestrian Fatality-D37
Pediatric-L8, L66
Pediatric Neuropathology-I11
Pediatrics-I99, L50
Pedigrees-F15
Pelvic Anomalies-A56
Penetrating Gunshot Wound-J7
Personal Identification-A18
Pesticide-F103
Pharmacokinetics-L61
Phosphatidyl Ethanol-L26
Photogrammetry Modeling-A80
Photography-W19, H22
Physical Assessment-F81
Physical Fits-B19
Physician Education-E14
Pickpocket Case Scenario-B3
Pigment-B175
Pinsetter-I4
Piperazine-B86
Piping-D7

Plastic Bags-I86
Plexity-B128
Plexor HY-Y26
PLS-DA-F25
PMCT-A18, I94
PMMRI-I115
Poisoning-F18, I74, I105, L17, L38
Polarized Light Microscopy-B170
Police Officer Resiliency-J7
Police Officer Suicides-J6
Polygonal Rifling-F114
Polymer-Coated Bullets-B34
Polymer Residue-B34
Polymers-B108, B111, K3
Popular Poetry-L52
Population Affinity-A72, A73, A98
Population Dataset-B131
Population Statistics-B77
Population Study-H16
Populations-B94
Portable Capillary LC-Y8
Position of the Aggressor-F52
Positive Dental ID-H19
Positive Identification-A15
Post WW Forensics-S4
Postdoctoral Fellowship-A25
Posterior Probability-A64
Postmortem-A44, C19, I19, I55, L50, L66
Postmortem Distribution-L18
Postmortem Drug Screening-L32
Postmortem Ethanol Production-L51
Postmortem Forensic Toxicology-L4, L47
Postmortem Genetic Testing-I101
Postmortem Imaging-W3, I96
Postmortem Interval-A11, A36, A37, A38,
A113, A125, F130, I63, I65, I78
Postmortem Interval (PMI)-W8, F136
Postmortem Investigation-I45
Postmortem Microbiome-I91
Postmortem Scavenging-A118
Postmortem Sequencing-I59
Postmortem Testing-I75
Postmortem Toxicology-L9
Postmortem Toxicology Laboratory
Practices-L53
Potassium-I65
Practitioner-Academic Partnership-F34
Pre-Blast Explosives-B31
Precipitation-F15
Predictive Modeling-B53
Pregnancy-I75
PrepGEM™-B43
Presumptive Test-B106
Prevention-E9
Print Processes-W22
Prison-L10
Privacy Preserving Digital Forensics-C14
Probability of Survival-I36
Probabilistic HGenotype-B51
Probabilistic Genotyping-B17, B49, B50,
B147
Probabilistic Genotyping Software-G11
Probability of Survival-I36
Process and Outcome Measures-E7
Process Mapping-B66
Profession-F33
Professional Liability-F75
Professional Responsibility/Ethics-G27
Progression of Individualizing
Characteristics-K17
Projectile-F11
Projectile Injuries-A42
Projectile Motion-D21
Proposed Changes to Rule 702
Prosecutorial Misconduct-G27
Protein Degradation-I88
Proteins-I63
Proteomic Genotyping-E18
Provenance-A108
Pseudogenes-B140
Psychedelics-I13
Psychiatric Assessment-J27, Y27
Psychiatric Disorders-F75
Psychological Assessment-J10
Psychological Autopsy-CB2
Psychopathy-J21
Psychosis-J30, L54
PSychotropic Drugs-L16
Psychochemical Changes-A11
Puberty-A90
Public Symphysial Surface Age
Estimation-D27
Public Health-W24
Publication Trends-A24
Pulmonary Aspiration-L17
Pulmonary Hemorrhage-I124
Pulmonary Hypertension-I111
Pulmonary Thromboembolism-I22
Puppe’s Rule-F7
Py-GC/MS-K22
Pyrosequencing-B104

Q
QI Agility-Y26
Qualifications-A74
Qualified Immunity-G39
Qualitative Research-B132
Quality-F40
Quality Control-A46, H15
Quality Management System-F39
Quality Metrics-E6
Qualtrics® Survey-B105
KEY WORD INDEX

Quantitation-B85, B88
Quantitative Analysis of THC-B119
Quantitative Evaluation of Evidence-W20
Quantitative Genetics-A95
QuEChERS-L52, Y10
Questioned Documents-W2, K7, K10
Questioned Writing-K18
QuickProbe® GC-MS-B73

Reverse Engineering-D25
Rhabdomyolysis-I99
Rib Fractures-I93
Ricin-I71
Rifling Twist-D9
Risk Assessment-J13
Ritual Homicide-F16
Road Accident-F56
Roadside Barrier-D21
Rubber Bullet-I5
Republic of the Gambia-I69
Rupture-I53
Rural-F1
Rural Communities-E7
Ruthenium Tetroxide-B165
RV Crashworthiness-D17

Sacrum-A56, A60
SALDI/MS-D29
Saliva Stain-D33
Salvia-E19
Sample Preparation-K22
Sample Processing-B13
SARS-Cov-2-I100
SARS-Cov-2 Infection-I59
Satellite Laboratories-D12
Saw-A9
Saw Mark Analysis-A127
Scanning Electron Microscopy-A43
Scavenging-A119
Scene Investigation-I6
Science-F71
Science Communication-A76
Scientific Evidence-G22
Scientific Foundation-G23, G25
Scientific Identification-A13
Scientific Publishing-W1
Scoliosis-A17
Score-Based Likelihood Ratio-F29
Screening Method-F121
Search and Rescue-F67
Search Key-B134
Search Structure-A33
Season of Death-A113
Seat and Belt Failure-D17
Seat, Head Restraint, and Belt Failure-D19, D24
Secure Documents-W22
Security Document Design-K2
Security Features-K2
Security Printing-K2
Seized Drug Analysis-F61
Seized Drugs-B64, B66, B83, B125, B152, B158
Seizure-I23, I73

Self-Amputation-F128
Self-Assembled Gold Nanoparticles-B33
Self-Identification-F120
Self-Immolation-F59
Self-Mutilation-F128
SEM/EDS-B36, Y5
Semen Identification-Y11
Sensitivity Analysis-D5
Sentencing-G36
Serial Killer-J21
SERS-F25, L5
Serum Separator Tubes (SST)-Y29
Serum Specimen Storage-Y29
Sex-F12
Sex Determination-A65, F121
Sex Estimation-A60, A61, A62, A64, A90, A91, A92, A94
Sex Prediction-A63
Sexual Assault-B12, B41, B43, E8, E16, E21
Sexual Assault Evidence-E18
Sexual Assault Kits-E8
Sexual Assault Nurse Examiners-E7
Sexual Assault Nurse Examination-D15
Sexual Assault Sample-B42
Sexual Coercion-E1
Sexual Lubricants-F125
Sexual Violence-F79, F123
Shark-I19
Sharp Force-A128
Sharp Force Fatalities-I5
Sharp Force Trauma-A7, A8, A9
Shelf Life-F10
Shields Experts-G39
Shoeprints in Mock Crime Scene-F31
Shooter’s Position-F112
Shooting Reconstruction-B163
Short Tandem Repeats (STRs) Profiles-B55, I47
Short Umbilical Cord-I120
Shotguns-I16, I37
Side Impact Car Crash-D22
SIDS-I98
Single Nucleotide Polymorphisms-B92
Signature Verification Algorithms-K20
Signatures-K19
Silica-Based DNA Extraction-B16
Silica Hydride Stationary Phases-B158
Silicone Oil-F58
Similarity Scores-C9
Single Nucleotide Polymorphism-B99, B102
Single-Cell Analysis-B53
Situs Inversus Totalis-I56
Skeletal Analysis-A45
Skeletal Atlas-A4
Skeletal Collections-A52
Skeletal Fracture-A41
Skeletal Remains-B90, B97, A130
<table>
<thead>
<tr>
<th>Key Word Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skeletal Sampling-B137</td>
</tr>
<tr>
<td>Skeletal Sex Estimation-A93</td>
</tr>
<tr>
<td>Skeletal Trauma-A3, A5, A40</td>
</tr>
<tr>
<td>Skid Mark-B173</td>
</tr>
<tr>
<td>Skin Popping-F45</td>
</tr>
<tr>
<td>Skin-Tone-A35</td>
</tr>
<tr>
<td>Skull Base-A89</td>
</tr>
<tr>
<td>Sleep Deprivation-F122</td>
</tr>
<tr>
<td>Smokeless Powders-B73</td>
</tr>
<tr>
<td>Smoker and Non-Smoker Donors-B169</td>
</tr>
<tr>
<td>Smoking and Tobacco Chewing-B168</td>
</tr>
<tr>
<td>SNP-B146</td>
</tr>
<tr>
<td>SNP Microarrays-B135</td>
</tr>
<tr>
<td>Social Justice-W5</td>
</tr>
<tr>
<td>Social Media-F64</td>
</tr>
<tr>
<td>Social Networking Apps-C10</td>
</tr>
<tr>
<td>Sodium Nitrite-F118, I74</td>
</tr>
<tr>
<td>Sodium Nitrite Self-Poisoning-I103</td>
</tr>
<tr>
<td>Software-C24</td>
</tr>
<tr>
<td>Soil-F101</td>
</tr>
<tr>
<td>Soil Chemistry-I89</td>
</tr>
<tr>
<td>Soil Microbiology-I90</td>
</tr>
<tr>
<td>Soil pH-A121</td>
</tr>
<tr>
<td>Solid Phase Extraction-B80, L23</td>
</tr>
<tr>
<td>Solid Phase Microextraction-B107</td>
</tr>
<tr>
<td>Solid Phase Microextraction-Gas Chromatography-Mass Spectrometry (HS-SPME-GC-MS)-F43</td>
</tr>
<tr>
<td>Solution-Dyed Fibers-B175</td>
</tr>
<tr>
<td>Solvent-F65</td>
</tr>
<tr>
<td>Somerton-LW3</td>
</tr>
<tr>
<td>Sonoran Desert-A44</td>
</tr>
<tr>
<td>Sorting-A105</td>
</tr>
<tr>
<td>Source Tracing-B178</td>
</tr>
<tr>
<td>South Africa-B149, B150</td>
</tr>
<tr>
<td>Spanish Sample-A85</td>
</tr>
<tr>
<td>SPE-L11</td>
</tr>
<tr>
<td>Special Session-S1</td>
</tr>
<tr>
<td>Species Identification-B142</td>
</tr>
<tr>
<td>Specifications Grading-F89</td>
</tr>
<tr>
<td>Specimen Storage-I68</td>
</tr>
<tr>
<td>Spectra-K23</td>
</tr>
<tr>
<td>Spectroscopy-A122, B34, F125</td>
</tr>
<tr>
<td>SpermX™-B42</td>
</tr>
<tr>
<td>Splenic Rupture-Y22</td>
</tr>
<tr>
<td>Stabbing-F52</td>
</tr>
<tr>
<td>Stability/pH-L45</td>
</tr>
<tr>
<td>Stable and Heavy Isotopes-A109</td>
</tr>
<tr>
<td>Stable Isotope-A110, A111</td>
</tr>
<tr>
<td>Stable Isotope Analysis of Bone-A46</td>
</tr>
<tr>
<td>Stable Isotope Analysis of Strontium-H6</td>
</tr>
<tr>
<td>Stable Isotope Forensics-A47, A108, A112</td>
</tr>
<tr>
<td>Stability-L7</td>
</tr>
<tr>
<td>Staffing and Employment-F92</td>
</tr>
<tr>
<td>Standard Addition-L42</td>
</tr>
<tr>
<td>Standard Practice-F38</td>
</tr>
<tr>
<td>Standardization-B167</td>
</tr>
<tr>
<td>Standardization of Methodologies-A66</td>
</tr>
<tr>
<td>Standards-S3, W25, A50, B38, B63, B64, C26, E5, F36, F37, F39, F47, G1, G2, G4, H21, I42, K6, K14, L39</td>
</tr>
<tr>
<td>Statistical Analysis-A49</td>
</tr>
<tr>
<td>Statistical Methods-A91</td>
</tr>
<tr>
<td>Statistics-B26, B81, B132, G6, K12</td>
</tr>
<tr>
<td>Statine-A100, A67</td>
</tr>
<tr>
<td>Steaming Committee-K7</td>
</tr>
<tr>
<td>Stop-Limit Testing-L58</td>
</tr>
<tr>
<td>STR-B146</td>
</tr>
<tr>
<td>STR Analysis-Y9</td>
</tr>
<tr>
<td>STR Sequencing-B129</td>
</tr>
<tr>
<td>STR Typing-B3</td>
</tr>
<tr>
<td>STRmix™-B10, B11</td>
</tr>
<tr>
<td>Strangulation-F57</td>
</tr>
<tr>
<td>Strategic-F90</td>
</tr>
<tr>
<td>Stream Hash-C8</td>
</tr>
<tr>
<td>Stream Integrity-C8</td>
</tr>
<tr>
<td>Stress and Coping Mechanisms-I38</td>
</tr>
<tr>
<td>Striped Skunk-A118</td>
</tr>
<tr>
<td>Structural Violence-A10, F85</td>
</tr>
<tr>
<td>Subadults-A106, C7</td>
</tr>
<tr>
<td>Subcutaneous Dissection-F100</td>
</tr>
<tr>
<td>Subdural-L9</td>
</tr>
<tr>
<td>Subdural Hemorrhage-I24</td>
</tr>
<tr>
<td>Submerged Firearm Firing-F113</td>
</tr>
<tr>
<td>Substrate-W22</td>
</tr>
<tr>
<td>Subtropics-A120</td>
</tr>
<tr>
<td>Sudden Cardiac Death-I26, I102</td>
</tr>
<tr>
<td>Sudden Death-I111, I115, L27</td>
</tr>
<tr>
<td>Sudden Unexpected Death-F60</td>
</tr>
<tr>
<td>Sudden Unexplained Death in the Young-I101</td>
</tr>
<tr>
<td>Sudden Young Death-I117</td>
</tr>
<tr>
<td>Suicidal Hanging-F17</td>
</tr>
<tr>
<td>Suicide-CB2, F6, F12, F57, F59, F64, I74, F118, F119, I2, I5, I16, I29, I122, J2, I29</td>
</tr>
<tr>
<td>Suicide Pact-F63</td>
</tr>
<tr>
<td>Suicide Emulation-J25</td>
</tr>
<tr>
<td>Sunscreen-Y24</td>
</tr>
<tr>
<td>Surface-Enhanced Raman Spectroscopy (SERS)-B28, B33, Surfside Building Collapse-B160</td>
</tr>
<tr>
<td>Surgical Implants-A13</td>
</tr>
<tr>
<td>Surveillance-F83, F119, L65</td>
</tr>
<tr>
<td>Surveillance Camera-C3</td>
</tr>
<tr>
<td>Survey-A19</td>
</tr>
<tr>
<td>Sutures-D36</td>
</tr>
<tr>
<td>Swab Analysis-F125</td>
</tr>
<tr>
<td>Sweat Analysis-F26</td>
</tr>
<tr>
<td>Swiss Alps-A126</td>
</tr>
<tr>
<td>Sydney Declaration-B69, B70, B71</td>
</tr>
<tr>
<td>Synthetic Cannabinoids-B115, B151, L37, L48</td>
</tr>
<tr>
<td>Synthetic Cathinone-B28, Y16</td>
</tr>
<tr>
<td>Synthetic Cathinone Positional Isomers-Y8</td>
</tr>
<tr>
<td>Synthetic Dyes-D3</td>
</tr>
<tr>
<td>Synthetic Opiates-L44</td>
</tr>
<tr>
<td>Synthetic Opioid-L44</td>
</tr>
<tr>
<td>Systematic Review-A12</td>
</tr>
<tr>
<td>Systematic Review and Meta-Analysis-A21</td>
</tr>
<tr>
<td>Systemic Thrombosis-I59</td>
</tr>
</tbody>
</table>

**T**

Tampering-D10

Tandem Mass Spectrometry-F133

Taphonomic Research Facility-A117

Taphonomy-A33, A34, A115, A118, A123, A127, G7, I80, LW2

Tarasoff-J3

Targeted Methods-L14

Tatoo-B23

Technical Error of Measurement-A60

Technical Note-A26

Techniques-F21

Temperature-I82

Template-H20

Tensile Strength-D36

Terrestrial Decomposition-A116

Testimony-B40, B49

Text Analysis-A129

Text and Geographic Analysis-F106

Textile Fiber Transfer and Persistence-B172

Textiles-B19

Texting While Driving-G12

THC-J24, L28, L53, L54

THC Analogs-W10

THC-Related Psychosis-W10

Theory of Identification-G23

Thermal Damage-A45

Thermal Desorption-B24

Thermal Injuries-F59

Thin Layer Chromatography-B122, L31

Third Molar-H11, H13

Three-Dimensional Measurement-A20

Threshold Assignment-H13

Thrombosis-I44

Thoracic Injury Mechanisms-D22

THUMS-D4

TikTok-C11

Time of Colonization-I78, I84

Time Since Death-F127, I88

Tires-B171, B173

Tissue Analysis-L42

Toner-W2

Tool Marks-B37

Toolkit-F86

Tooth Roots and Overlays-H19
KEY WORD INDEX

Touch DNA-B8, B9, B54, B58
Toxic Psychosis Cocaine-J12
Toxicological Effects of Asp Bite-F69
Toxico-Surveillance-W24
TPPR-B57
TPS Software-C6
Trace Chemical Detection-B33
Trace DNA-B3, B4, B14
Trace Elements-B81
Trace Evidence-B163, B173
Trace Materials-B61
Traceability-F102
Traces-W14, B72
Traffic Investigations-G19
Traffic Safety-L55
Training-G30, K7, K14
Training Aids-B30
Training in Forensic Science-G5
Transfer and Persistence-W14
Transfer DNA-B10, B11
Transgender-F85, I62
Transgenic-I83
Transitional Justice-A52
Transparency-G29, G32
Trauma-A6, A10, A11, A42, A44, F16, G36, I24, I76
Trauma Analysis-A7, A40
Trauma Interpretation-A39
Trauma Score-I34
Traumatic Brain Injury-I17, J7
Traumatology-I115
Treatment-J9, J31
Trial-F98
Tricyclic Antidepressant-CB2
Triple-Quadrupole (QQQ)-B73
Triplet Convolutinal Neural Network-C31
Tropical Weather-B45
True Unknowns-A31
Turkey-J8
Typeface Identification-K10

V

Vaccine-I44, I60
Vacuous Standards-G3
Validation-B88, B114, B126, B127, B147, F99, Y21, Y26
Validation Testing-D16
Vapor Transport-B79
Vasodilation-I107
Vegetable Fibers-B170
Vehicle Rear Crash-D24
Vehicle Rear Impact-D20
Vehicle Seat and Belt Failure-D20
Vehicle Speed-D21
Vehicle Rear Crash-D19
Vertebrae-A88
Vertebral Curvature-A17
Victim-Offender Relationship-F104
Victimization-G36
Video-C3
Video Analysis-D37, D39
Violence-F80
Violence Against Children-E2
Violence Against Women-F80, E21
Violent Deaths-I21
Virtual-Y19
Virtual Anthropology-A96, A99
Virtual Dissection-C34
Vitreous Fluid-L50
Vitreous Humor-L4, L13, L32
VITT-I43, I44
VPN Fingerprinting-C16
VPN Forensics-C16
Vulture Scavenging-A34

W

War Crimes-F117
War-Related Conflicts-F135
Water-A120
Water Recovery-F42

Water Submerged Firing-D8
Weathering-B121
Web3 Cryptocurrency Wallets-C13
Weight of Evidence-W20, B77
Weight Loss-I109
Werther Effect-J25
Wildlife Forensics-F37, B67, Y9, Y17
Winter-I79
Woodcutting Art-L53
Work Accident-I20
Workplace-I33
Workplace Bullying-F84
Wound Ballistics-B120
Wrongful Convictions-L3, G26

X

X-Ray Diffraction (XRD)-B65, H5
X-Ray Microtomography-H14
XRD-Y5
XRF-A123
Xylazine-L3

Y

Y-Screening-B41
YFSF-S1
Youth-F64, I122
Youth Gangs-F79
YouTube®-C1

Z

Zygomatic Bones-A62
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.

A
- Anthropology
- Criminalistics
- Digital & Multimedia Sciences
- Engineering & Applied Sciences
- Forensic Nursing Science
- General
- Jurisprudence
- Odontology
- Pathology/Biology

J
- Psychiatry & Behavioral Science
- Questioned Documents
- Toxicology

L
- Last Word Society

Y
- YFSF Poster

CB
- Case Break Session

LS
- Luncheon Seminar

SS
- Special Session

W
- Workshop

A
- Aalbers, Sanne-B132
- Abenante, Barbara-F13
- Abreo, Eleanor-D132
- Acampora, Giovanni-D2
- Adamik, Hailey-Y17
- Adams, Elise-A10
- Adcox, Devin-A42
- Adelizzi, Betsy-CB1
- Adeoye, Alexandra-B84
- Adolphi, Natalie-W3
- Adriazola, Sara- F54
- Aggazzotti, Cristina-C28
- Agnew, Amanda-W18
- Agnolucci, Jacopo-I116
- Ahlawat, Bhavna-A55
- Ahn, Yoo Min-I3
- Ahmad, Mohammad Nasir-F88, F127
- Akiyama, Cliff-F79
- Albano, Liana-B34
- Ali-Gombe, Aisha-C15
- Al-Heti, Entesar-O29, D33
- Al-Malki, Abdulaziz-F59
- Al-Malki, Bashir-F59
- Alipour Yengejeh, Amir-B171
- Al-Leftik, Nevin-J6, J8
- Almela, Angela-D16
- Alsalamah, Shada-C32
- Altaloe, Salem-H15
- Altekin, Civan-I49
- Alves, Emanuele-B20
- Alves, Andrea-B143
- Ambrosius, Teresa-W7
- Amin, Mohamed-B124, B169
- Anderson, Daniel-W26
- Anderson, Eric-A103
- Andrews, Zachary-B19
- Andrzejowski, Janna-A69
- Annas, David-S4
- Annas, George-W9
- Antonelli, Lillian-A3
- Antunovic, Ivana-L2
- Appia-Kusi, Volda-B158
- Aquila, Isabella-F69, F124, F130, F132, H18, I10, I63, I102, I112, J2, J28
- Arapob, Alexandra-K13
- Arbeleve, Elise-L57
- Archer, Cody-I122
- Armelli, Kerianne-A5
- Arturi, Mattia-F45
- Arunkumar, Pooni-W16
- Aschheim, Kenneth-H21
- Aucht, Leah-A99
- Auld, Finn-I27
- Aulino, Giovanni-F77, I35, L60
- Ausania, Francesco-I63, L51
- Avellaneda, Lucio-B148
- Avent, Patricia-A16
- Ayala, Jessica-L63
- Aymar, Paige-Y3

B
- Bacci, Mauro-F57
- Bagwell, Laura-I21
- Bailey, Christine-A36
- Baker, Andrew-I76, I66
- Baldari, Benedetta-F73, F119
- Baraybar, Jose-F102
- Bayer-Broring, Carolyn-W22
- Beane, Keegan-A62
- Behera, Chittaranjan-I47
- Bennett, Krista-A56
- Berg, Gregory-W6
- Berishaj, Kelly-E12
- Bermeo Gajales, Daniela-I62
- Bernet, William-J19, J20
- Berning, Amy-L55
- Berry, Jennifer-D5, L36
- Berthelot, Carolyn-F76
- Bertozzi, Giuseppe-F60, I115
- Bertrand, Benoit-A113
- Best, Saffiy-F125
- Bhambho, Zain-S3, W2, K10
- Bianchi, Ilene-H2
- Bibb, Roberta-I7, I37
- Bidmos, Mubarak-A63
- Bixler, Amanda-F62
- Blocher-Smith, Ethan-I74
- Bloom, Madeline-B152
- Bolhofner, Katelyn-A4

C
- Cabelus, Nancy-E9
- Cablk, Mary-F42
- Carbajales-Dale, Patricia-W8
- Calabrese, Emma-B79
- Calbano, Mariagrazia-I2
- Cal, Cynthia-W4
- Cale, Tom-K7
- Cano, Kris-W25
PRESENTING AUTHOR INDEX

Cantatore, Santina-I7
Cantu, Cesar-B138
Capello, Francesca-F13, I51, J18
Cardasis, Stavros-J29
Cardenas, Alicia-B49
Carney, John-G12
Carpenter, Morgan-B36
Capistran, Briana-B76
Caristo, Isabella-I103
Carrillo, Kayli-B4
Carriquiry, Alicia-W20
Carroll, Megan-A78
Carter, David-G7
Carter, Melinda-A89, E14
Caruso, James-W26
Castillo, Abigail-F120
Cawley, Hannah-F67Z
Cazzato, Francesca-I98
Cecannecchia, Camilla-F116, F117, F134
Chambers, Meagan-I28
Chapman, Abby-F97
Chaski, Carole-D14, D15
Chauhan, Mohit-A87
Cheng, Ya-Chih (Jessica)-B140
Chesson, Lesley-W6
Chighine, Alberto-I65, I66, I113
Cho, Sohee-B102
Christy, Brenda-B62
Cicchini, Alessandra-I52
Clark, Rachel-W24
Coble, Michael-G8, G11
Cocimano, Giuseppe-F55
Cole, Mary-A71
Cole, Stephanie-A90
Collier, Shanetha-H9
Collins, Cheyenne-A33
Conlin, Bradley-I125
Consalvo, Francesca-J2
Corte-Real, Ana-H17
Costantino, Andrea-B118, L38
Cotton, Robin-B39
Couch, Alleigh-B35
Coutinho, Eduardo-I106
Covey, Jenna-B111
Cox, Joseph-L52
Crespo Cajigas, Janet-B87
Crimmins, Danielle-C29
Crist, Thomas-LW2
Crowson, Jessica-F107
Cruse, Courtney-B80
Culbertson, Hillary-B106
Curran, Joseph-I19
Czado, Natalia-B99

D
D’Aleo, Michele-I15
D’Anjou, Corinne-H7
Damas, Sergio-A83
Damilo, Craig-I46
Dampa, Peter-F131, I69
Das, Siddhartha-A65, I34
Davenport, Madison-Y26
Davis, Lucy-W25
De Alcaraz-Fossoul, Josep-B32, B55
De Boer, Hans-I39, I40
De Forest, Peter-W14
De Gabriele, Giovanni-J30
De La Paz, Jade-A94
De Luca, Benedetta Pia-B23, G15
DeBord, Joshua-B85
Decker, Summer-A18, W3
DeFrancesco, James-L26
Delibe, Samantha-Y28
delong, Joyce-J76
Delgado-Aguacia, Claudia-F95
Delger, Dana-G2
DellaRocco, Rana-F84
DeMeo, J.S.-W6
Demeter, Kaleigh-F76
Demmler, Morgan-D26
Denn, Max-B121
DePreest, Benjamin-I61
Derrick, Sharon-A82, C31
Desharnais, Brigitte-L22
DesMarais, Angel-A92
Despierrres, Alice-G22
DeVito, Dana-B144
Di Donna, Gaetano-F110
Di Nunzio, Aldo-B7, D2
Di Nunzio, Ciro-B7, D2
Di Nunzio, Michele-B55, B92, D2
Diani, Luca-J16
Dickey, Barry-C3
DiComo, Kara-A120
Diltz, Elizabeth-Y15
Ditto, Emily-F72
DiZinno, Joseph-B68
Domitrovich, Stephanie-W25, G39, G40
Donato, Laura-F78
Donfack, Joseph-B27
Dowdell, Elizabeth-E12, E13
Downing, Nancy-E5
Downs, Steve-W19
DRAFT, Derek-H22
Drall, Jatin Kumar-L24
Drommi, Martina-I118
Dudzik, Christopher-G19
Duncan, Anielle-A122
Dunn, Rhian-A129

E
Ebrett, Carl-W8
Echavarria, Genesis-B6
Eckstein, Robert-F85
Edgar, Heather-A101
Edwards, Delaney-A6
Ehrett, Carl-W8
Eickhoff, Logan-F115
Eldridge, Heidi-B63
Elfritz, Jamie-I92
Elkins, Kelly-W1
Ely, Susan-I76
Eng, Emily-L23
Epstein, Brandon-C12
Escobar, Jorge-D6
Evans, Alexandra-W24

F
Fabricant, Chris-G26
Failla, Andrea Vittorio-Maria-F56, H74
Fain, Miranda-A119
Farrell, Laurel-S3
Faugno, Diana-E19
Feeney, William-B25
Feltous, Alan-J31
Fernandez-Tejero, Nicole-B104
Ferreira, Sandra-D12
Ferrill, Jamie-E6
Ferrill, Morgan-A61
Ferrera, Michela-F57
Ferrero, Alessandro-D10
Feuerstein, Derek-C12
Fields, Christopher-I3
Finkelstein, Marissa-L47
FIREK, Julianna-Y19
Fisher, Barry A.J.-S4
Fitzpatrick, Colleen-G9, LW3, LW4
Fleischman, Julie-A22, A50
Fint, Sheree-I87
Foley, Megan-B129
Fondebrider, Luis-S2
Ford, Jonathan-A18, W3
Forte, Leann-B161
Forzese, Elena-CB3, E20, F129
Fox, Sherry-F82
Francaviglia, Martina-F56
Franchetti, Giorgia-I93
Franceschetti, Lorenzo-F81
Franck, Darren-D21
Frausto, Daniela-B96
Fredericks, Jamie-B9
Freitas, Corina-S4, W9
Fuehr, Stephanie-A88
Fuglsby, Cami-K9
Fugliniti, Laura-S1
Fulp, Kaitlyn-A124
Funes, David-B174
Furton, Kenneth-F47

G
Gaggio, Vittorio-F5, F6
Galante, Nicola-F63
Galassi, Francesco-F69
Galekovic, Jasna-K3
Gallotti, Eugenio-I18
Galvez Valencia, Isabel-B117
Garcia, Lynn-G3, G6, G24, W17
Gardner, Taylor-H4
Gariglio, Sara-L25
Garogano, Luciano-G10
Garrett, Brandon-S1
Garza, Shelby-A1
Gasparini, Laura Camilla-J16
Gatto, Vittorio-F53, F58
Geisendorfer, Ann-W5
Gemmellaro, Denise-G19, I70, L62, S1
Gerege, Camilla-H1
George, Isabella-B130
George, Rebecca-A45
Georgiev, Mihaela-L27
Geradts, Zeno-C30
<table>
<thead>
<tr>
<th>Author Name</th>
<th>Initials</th>
<th>Page Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gestring, Brian</td>
<td>F40</td>
<td></td>
</tr>
<tr>
<td>Getz, Allison</td>
<td>S3, W7</td>
<td></td>
</tr>
<tr>
<td>Ghemrawi, Mirna</td>
<td>B142</td>
<td></td>
</tr>
<tr>
<td>Giacomello, Emma</td>
<td>E-A38</td>
<td></td>
</tr>
<tr>
<td>Gibbs, William</td>
<td>Y11</td>
<td></td>
</tr>
<tr>
<td>Gibson-Daw, Georgiana</td>
<td>B13</td>
<td></td>
</tr>
<tr>
<td>Gill, James</td>
<td>J76</td>
<td></td>
</tr>
<tr>
<td>Gillis, Hannah</td>
<td>G4</td>
<td></td>
</tr>
<tr>
<td>Giorgetti, Mirna</td>
<td>B142, L42</td>
<td></td>
</tr>
<tr>
<td>Giacomello, Emma</td>
<td>A38</td>
<td></td>
</tr>
<tr>
<td>Gibbs, William</td>
<td>Y11</td>
<td></td>
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<tr>
<td>Gibson-Daw, Georgiana</td>
<td>B13</td>
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<tr>
<td>Gill, James</td>
<td>J76</td>
<td></td>
</tr>
<tr>
<td>Gillis, Hannah</td>
<td>G4</td>
<td></td>
</tr>
<tr>
<td>Giorgetti, Mirna</td>
<td>B142, L42</td>
<td></td>
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<tr>
<td>Giacomello, Emma</td>
<td>A38</td>
<td></td>
</tr>
<tr>
<td>Gibbs, William</td>
<td>Y11</td>
<td></td>
</tr>
<tr>
<td>Gibson-Daw, Georgiana</td>
<td>B13</td>
<td></td>
</tr>
<tr>
<td>Gill, James</td>
<td>J76</td>
<td></td>
</tr>
<tr>
<td>Gillis, Hannah</td>
<td>G4</td>
<td></td>
</tr>
<tr>
<td>Grass, Simone</td>
<td>I26</td>
<td></td>
</tr>
<tr>
<td>Greiter, Anthony</td>
<td>G6</td>
<td></td>
</tr>
<tr>
<td>Griffin, Darina</td>
<td>G29</td>
<td></td>
</tr>
<tr>
<td>Grover, Celeste</td>
<td>B61</td>
<td></td>
</tr>
<tr>
<td>Guatame, Ana Carolina</td>
<td>D6</td>
<td></td>
</tr>
<tr>
<td>Guerra Martí, Rosario</td>
<td>A77</td>
<td></td>
</tr>
<tr>
<td>Gunther, Wendy</td>
<td>W7</td>
<td></td>
</tr>
<tr>
<td>Gupta, Avneesh</td>
<td>I24</td>
<td></td>
</tr>
<tr>
<td>Gutman, Barbara</td>
<td>C22</td>
<td></td>
</tr>
<tr>
<td>Gwak, Seongshin</td>
<td>A48, B109</td>
<td></td>
</tr>
<tr>
<td>Haberstock, Isabella</td>
<td>Y10</td>
<td></td>
</tr>
<tr>
<td>Hachem, Mayssa</td>
<td>F24</td>
<td></td>
</tr>
<tr>
<td>Hackworth, Brittney</td>
<td>B103</td>
<td></td>
</tr>
<tr>
<td>Hainsworth, Sarah</td>
<td>D36</td>
<td></td>
</tr>
<tr>
<td>Halamek, Jan</td>
<td>F26</td>
<td></td>
</tr>
<tr>
<td>Hale, Amanda</td>
<td>A98</td>
<td></td>
</tr>
<tr>
<td>Hamel, Marianne</td>
<td>I75</td>
<td></td>
</tr>
<tr>
<td>Hamilton, Jenna</td>
<td>F136</td>
<td></td>
</tr>
<tr>
<td>Hampikian, Greg</td>
<td>W4</td>
<td></td>
</tr>
<tr>
<td>Han, Valerie</td>
<td>F29</td>
<td></td>
</tr>
<tr>
<td>Hangse, Tiffany</td>
<td>L32</td>
<td></td>
</tr>
<tr>
<td>Hard, Shelby</td>
<td>A3</td>
<td></td>
</tr>
<tr>
<td>Harden, Angela</td>
<td>A40, W18</td>
<td></td>
</tr>
<tr>
<td>Harding, Brett</td>
<td>F74</td>
<td></td>
</tr>
<tr>
<td>Hardin, Elise</td>
<td>F17</td>
<td></td>
</tr>
<tr>
<td>Harman, Kent</td>
<td>F15</td>
<td></td>
</tr>
<tr>
<td>Haroon, Haseeb</td>
<td>J5</td>
<td></td>
</tr>
<tr>
<td>Hasert, Anita</td>
<td>F27</td>
<td></td>
</tr>
<tr>
<td>Haycock, Neil</td>
<td>I53, I05</td>
<td></td>
</tr>
<tr>
<td>Healy, Courtney</td>
<td>L21</td>
<td></td>
</tr>
<tr>
<td>Hedlund, George</td>
<td>B178</td>
<td></td>
</tr>
<tr>
<td>Hernandez, Steven</td>
<td>G34</td>
<td></td>
</tr>
<tr>
<td>Hentschel-Fey, Kelsey</td>
<td>A34</td>
<td></td>
</tr>
<tr>
<td>Hersh, Amanda</td>
<td>L-A44</td>
<td></td>
</tr>
<tr>
<td>Hervey, Barbara</td>
<td>G30</td>
<td></td>
</tr>
<tr>
<td>Hewes, Matthew</td>
<td>B159</td>
<td></td>
</tr>
<tr>
<td>Hicklin, R. Austin</td>
<td>B52</td>
<td></td>
</tr>
<tr>
<td>Higginsson, Elizabeth</td>
<td>F128</td>
<td></td>
</tr>
<tr>
<td>Hill, Huntyr</td>
<td>A121</td>
<td></td>
</tr>
<tr>
<td>Hime, George</td>
<td>S4</td>
<td></td>
</tr>
<tr>
<td>Hinojosa, Ryan</td>
<td>B58</td>
<td></td>
</tr>
<tr>
<td>Hochstatter, Karl</td>
<td>F2</td>
<td></td>
</tr>
<tr>
<td>Hoffman, Michelle</td>
<td>D23</td>
<td></td>
</tr>
<tr>
<td>Holobinko, Anastasia</td>
<td>A79</td>
<td></td>
</tr>
<tr>
<td>Holoyda, Brian</td>
<td>J13</td>
<td></td>
</tr>
<tr>
<td>Holt, Alaina</td>
<td>W10</td>
<td></td>
</tr>
<tr>
<td>Hornagold, Lyndsey</td>
<td>A52</td>
<td></td>
</tr>
<tr>
<td>Houck, Max</td>
<td>F33</td>
<td></td>
</tr>
<tr>
<td>Huang, Ting-Yu</td>
<td>B75, B107</td>
<td></td>
</tr>
<tr>
<td>Hudson, Brittany</td>
<td>B43</td>
<td></td>
</tr>
<tr>
<td>Hunter, Cheryl</td>
<td>S1</td>
<td></td>
</tr>
<tr>
<td>Hutchinson, Shinnelle</td>
<td>C16</td>
<td></td>
</tr>
<tr>
<td>Iacoponi, Naomi</td>
<td>B118, F118</td>
<td></td>
</tr>
<tr>
<td>Iannello, Domenicantonio</td>
<td>E20</td>
<td></td>
</tr>
<tr>
<td>Indra, Lara</td>
<td>A126</td>
<td></td>
</tr>
<tr>
<td>Ingoldstad, Megan</td>
<td>A106</td>
<td></td>
</tr>
<tr>
<td>Iorio, Isabella</td>
<td>B155</td>
<td></td>
</tr>
<tr>
<td>Irmici, Marco</td>
<td>I15</td>
<td></td>
</tr>
<tr>
<td>Isa, Mariyam</td>
<td>A24</td>
<td></td>
</tr>
<tr>
<td>Jackson, Glen</td>
<td>B83, B115</td>
<td></td>
</tr>
<tr>
<td>Jakobsson, Gerd</td>
<td>L61</td>
<td></td>
</tr>
<tr>
<td>Jaques, Susan</td>
<td>W6</td>
<td></td>
</tr>
<tr>
<td>Jarose, Hannah</td>
<td>I31</td>
<td></td>
</tr>
<tr>
<td>Javan, Gulnaz</td>
<td>I87, I91</td>
<td></td>
</tr>
<tr>
<td>Jayarama, Jayakumar</td>
<td>H11</td>
<td></td>
</tr>
<tr>
<td>Jeong, Yangsung</td>
<td>A84, A119</td>
<td></td>
</tr>
<tr>
<td>Jimenez, Julianna</td>
<td>F121</td>
<td></td>
</tr>
<tr>
<td>Johnson, Damani</td>
<td>B128</td>
<td></td>
</tr>
<tr>
<td>Johnson, Steven</td>
<td>C5</td>
<td></td>
</tr>
<tr>
<td>Jones, John (JP)</td>
<td>G2, G5</td>
<td></td>
</tr>
<tr>
<td>Jones, Nicole</td>
<td>F39</td>
<td></td>
</tr>
<tr>
<td>Jorgenson, Kyla</td>
<td>I11</td>
<td></td>
</tr>
<tr>
<td>Joseph, A. Skylar</td>
<td>A111</td>
<td></td>
</tr>
<tr>
<td>Joshi, Monica</td>
<td>B73</td>
<td></td>
</tr>
<tr>
<td>Juarez, Chelsey</td>
<td>A2, A53</td>
<td></td>
</tr>
<tr>
<td>Juarez, Lopez</td>
<td>Marlen-A44</td>
<td></td>
</tr>
<tr>
<td>Jui-An, Chang</td>
<td>I119</td>
<td></td>
</tr>
<tr>
<td>Kaegi, Valeria</td>
<td>E10</td>
<td></td>
</tr>
<tr>
<td>Kahl, Kristin</td>
<td>I59</td>
<td></td>
</tr>
<tr>
<td>Kalafut, Tim</td>
<td>B40</td>
<td></td>
</tr>
<tr>
<td>Kammrath, Brooke</td>
<td>S1, W14</td>
<td></td>
</tr>
<tr>
<td>Kamnikar, Kelly</td>
<td>A80, A97</td>
<td></td>
</tr>
<tr>
<td>Karabiyi, Umit</td>
<td>C27</td>
<td></td>
</tr>
<tr>
<td>Karaboue, Michele</td>
<td>Antonio-i7</td>
<td></td>
</tr>
<tr>
<td>Karl, Alexys</td>
<td>Y13</td>
<td></td>
</tr>
<tr>
<td>Karpinsky, Michelle</td>
<td>B160</td>
<td></td>
</tr>
<tr>
<td>Kataria, Ajay Kumar</td>
<td>L24</td>
<td></td>
</tr>
<tr>
<td>Katsafanas, Jacob</td>
<td>Y16</td>
<td></td>
</tr>
<tr>
<td>Kaufman, Lindsey</td>
<td>B101</td>
<td></td>
</tr>
<tr>
<td>Kaur, Jagmeet</td>
<td>B168</td>
<td></td>
</tr>
<tr>
<td>Kaur, Lovepreet</td>
<td>C4</td>
<td></td>
</tr>
<tr>
<td>Kay, Jeff</td>
<td>F8</td>
<td></td>
</tr>
<tr>
<td>Kearsley, Anthony</td>
<td>D31</td>
<td></td>
</tr>
<tr>
<td>Keller, Jordan</td>
<td>D1</td>
<td></td>
</tr>
<tr>
<td>Kemper, Bart</td>
<td>D7</td>
<td></td>
</tr>
<tr>
<td>Kennedy, Jarrah</td>
<td>W17</td>
<td></td>
</tr>
<tr>
<td>Kenyhercz, Michael</td>
<td>A114</td>
<td></td>
</tr>
<tr>
<td>Keys, Kelly</td>
<td>F35, F36, I41</td>
<td></td>
</tr>
<tr>
<td>Kim, Dong-Ho</td>
<td>A20</td>
<td></td>
</tr>
<tr>
<td>Kim, Jaymelee</td>
<td>A28, E4</td>
<td></td>
</tr>
<tr>
<td>Kim, Yi-Suk</td>
<td>A20</td>
<td></td>
</tr>
<tr>
<td>King, Pamela</td>
<td>W25</td>
<td></td>
</tr>
<tr>
<td>King, Steff</td>
<td>F38</td>
<td></td>
</tr>
<tr>
<td>Kintz, David</td>
<td>F108</td>
<td></td>
</tr>
<tr>
<td>Klein, Benjamin</td>
<td>C12</td>
<td></td>
</tr>
<tr>
<td>Klemm, Maggie</td>
<td>A115</td>
<td></td>
</tr>
<tr>
<td>Klootnick, Joel</td>
<td>K2</td>
<td></td>
</tr>
<tr>
<td>Kmidowski, Shelby</td>
<td>G21</td>
<td></td>
</tr>
<tr>
<td>Kolpan, Katherine</td>
<td>C33</td>
<td></td>
</tr>
<tr>
<td>Kominek, Sonia</td>
<td>I62</td>
<td></td>
</tr>
<tr>
<td>Kortonick, Kristine</td>
<td>A125</td>
<td></td>
</tr>
<tr>
<td>Kreidler, Tiffany</td>
<td>B3</td>
<td></td>
</tr>
<tr>
<td>Kress, Devlin</td>
<td>Y29</td>
<td></td>
</tr>
<tr>
<td>Krishan, Kewal</td>
<td>F28</td>
<td></td>
</tr>
<tr>
<td>Krotulski, Alex</td>
<td>W4, L46</td>
<td></td>
</tr>
<tr>
<td>Krug, Chris</td>
<td>S3</td>
<td></td>
</tr>
<tr>
<td>Kuehn, Makenzie</td>
<td>B31</td>
<td></td>
</tr>
<tr>
<td>Kulbacki, Kevin</td>
<td>K6, K19, K20, W7, W23</td>
<td></td>
</tr>
<tr>
<td>Kumar, Sachin</td>
<td>F126</td>
<td></td>
</tr>
<tr>
<td>Kumar, Swathi</td>
<td>W21</td>
<td></td>
</tr>
<tr>
<td>Kurouski, Dmitry</td>
<td>F25</td>
<td></td>
</tr>
<tr>
<td>Kyu-Young, Lim</td>
<td>D38</td>
<td></td>
</tr>
<tr>
<td>LaBat, Devon</td>
<td>G31</td>
<td></td>
</tr>
<tr>
<td>LeBeau, Marc</td>
<td>W7</td>
<td></td>
</tr>
<tr>
<td>Lambrigger, Taylor</td>
<td>A47</td>
<td></td>
</tr>
<tr>
<td>Lane, Katherine</td>
<td>A91</td>
<td></td>
</tr>
<tr>
<td>Lang, Dehila</td>
<td>L20</td>
<td></td>
</tr>
<tr>
<td>Lasater, Marie</td>
<td>C2, F1</td>
<td></td>
</tr>
<tr>
<td>Laskowski, Gregory</td>
<td>S1</td>
<td></td>
</tr>
<tr>
<td>Lattanzi, David</td>
<td>E11</td>
<td></td>
</tr>
<tr>
<td>Lau, Victoria</td>
<td>B172</td>
<td></td>
</tr>
<tr>
<td>Law, Eric</td>
<td>B18</td>
<td></td>
</tr>
<tr>
<td>Le, Diana</td>
<td>B151</td>
<td></td>
</tr>
<tr>
<td>Leach, Rose</td>
<td>A13</td>
<td></td>
</tr>
<tr>
<td>Leary, Pauline</td>
<td>W4</td>
<td></td>
</tr>
<tr>
<td>LeBeau, Marc</td>
<td>L39</td>
<td></td>
</tr>
<tr>
<td>Ledergerber, Thomas</td>
<td>B114</td>
<td></td>
</tr>
<tr>
<td>Ledic, Andrea</td>
<td>F51</td>
<td></td>
</tr>
<tr>
<td>Lednev, Igor</td>
<td>B162</td>
<td></td>
</tr>
<tr>
<td>Lee, Han-Fima</td>
<td>J31</td>
<td></td>
</tr>
<tr>
<td>Lee, Henry</td>
<td>S1, W14</td>
<td></td>
</tr>
<tr>
<td>Lee, Sang-Seob</td>
<td>H16</td>
<td></td>
</tr>
<tr>
<td>Leggio, Frankie</td>
<td>Y1</td>
<td></td>
</tr>
<tr>
<td>Legron-Rodriguez, Tamra</td>
<td>F89</td>
<td></td>
</tr>
<tr>
<td>Lemos, Nikolas</td>
<td>L66</td>
<td></td>
</tr>
<tr>
<td>Lesciotto, Kate</td>
<td>A60</td>
<td></td>
</tr>
<tr>
<td>Leveque, Laetitia</td>
<td>F100, I57</td>
<td></td>
</tr>
<tr>
<td>Lewis, E. Thomas</td>
<td>J3</td>
<td></td>
</tr>
</tbody>
</table>
PRESENTING AUTHOR INDEX

Licciardello, Gabriele-F7
Lim, Pilhyun-K15
Listi, Ginesse-A27, A32
Livieri, Tommaso-I56
Livingston, Kristen-L49
Logan, Barry-S24, W26, L49
Lohmann, Justin-I14
Longjohn, Rachel-C20
Lucas, Victoria-H13
Lund, Merete-I125
Lucchi, John-B173
Lund, Merete-I125
Lupariello, Francesco-E2, I96
Liva, Vincenzo-G20
Lyle, James-C25
Lynch, Robert-D34

Macinnis, Amber-I83
Mack, Gregory-J7
Macaroni, Enrica-D25
Madeira, Joana-I54
Madeira, Joana-I54
Madireddi, Sundeep-J9
Maesani, Martino-I10
Maglitto, Andreana N.M.-I120
Magni, Paola-I45, I80
Manetti, Alice Chiara-F118
Maney, Erica-Y6
Manzolillo, Patricia-K5
Marcacci, Ilaria-F118, I104
Margueritte, Emmanuel-I30
Marsh, Peter-H20
Marsh, Charla-B131
Martin, Mikalla-W17
Martinez, Iliasah-A72
Martire, Cristian-J10
Martos, Rubén-A15, A77
Massari, Kayla-I133
Mattei, Aldo-B167
Mattos, Samantha-F64
Maxwell, Jasmine-L56
Maya, Leonardo-L43
Mayer, Romana-I21
Maynard, Robin-W5
Mazieres, Olympe-H8
Mazzocchi, Mario-Edward-W3
McArthur, Kelsey-C19
McCready, Carina-R8, S4
McCord, Bruce-L5
McCraner, Samantha-F16
McDowell, John-H3
McKee-Zech, Hayden-A26, A116
McKim, James-W5
McLendon, Marna-G5
McMahon, Timothy-W6
McNeil, Mary-W25
McQuade, Wendy-A50
Meach, Rachel-A17
Medeiros, Jose-L52, LS3
Mein, Carely-A11
Meiklejohn, Kelly-B67
Melnik, Isabel-B10
Meloro, Raphael-A93
Melson, Kenneth-S4
Mendonca, Ricardo-F52
Menendez, MJ-G13, W26
Mercurio, Isabella-I73
Mesejo, Pablo-D40
Message, Olivia-B11
Mozzetti, Eleonora-L20
Michael, Amy-A24, F85
Middleberg, Robert-L47, L66
Midithi, Karen-L50, L66
Miles, Amy-W24
Mileva, Biliana-I5, I13
Miltbern, Zoe-D3
Milone, Valentina-I7
Milroy, Christopher-L66, S4
Minasi-Tapia, Dominic-L11
Minick, Brendan-B24
Mininni, Joseph-I16
Miranda, Michelle-B72
Mirza, Mohammad Meraj-C13, C27
Mitchell, Stacey A-E12
Mohammed, Linton-W25, K21
Mohr, Amanda-W24
Mondello, Cristina-E20
Moralis, Konstantinos-A105
Moran, Kimberlee-F122
Moreno, Sara-B122
Moretti, Marta-I51
Morgan, Danielle-I38
Mor, Diego-F119
Morton, Kaylee-Y7
Moses, Sharon-F66
Moryan, Donald-K18
Moxce, Raeanne-A123
Mroz, Gabriela-F101
Mullis, Diana-J3
Mundy, Amber-A130
Musile, Giacomo-L4
Mustafa, Mohammed-J24
Myers, Brynn-Y17

Nachmias, Navit-A57
Nasrazadani, Arezo-I100
Neal, Tess-J10
Nelson, Alex-C23
Nelson, Cheryl-F44
Neudecker, Klaus-J4
New, Briana-A96
Newman, Reta-W26
Nguyen, Athena-K22
Nguyen, Savannah-Y9
Nickels, Breanna-B94
Nickson, Nikki-I1
Nirenberg, Michael-F28
Nix, Lori-S3
Nouwairi, Renna-B48
Novak, Martin-F41
Nuzzo, William-G39, G40
Nuzzolese, Emilio-D34

O
O’Donnell, Chris-W3
O’Leary, Owen-W6
O’Sullivan, Phillip-Y20
Odom, Nicole-C17
Olefein, Rachel-B57
Ogunseyi, Taiwo-C14
Okafar, Uzoma-L34
Ocker, Antone-B149, B150
Oldoni, Fabio-B105
Olowe, Ibukunoluwa-A35
Olivet, Elisa-J27
Ommen, Danica-W20, B26
Orrozco Ramelli, Daniela-A108
Ortanca, Ibrahim-L8
Osborne, Nikola-W17
Ostenso, Vallarie-B100
Owenkerk, Brooke-B91
Ozen, Burcu-D30
Ozer, Alik-F13

P
Padovan, Martina-I6
Pagacz, Michael-F19
Paggiaro, Elaine-S1, W14
Pakes, Kathleen-G33
Palenik, Skip-B175
Palmiotto, Andrea-A104
Panata, Laura-F57, 9
Panzica, Nicole-I29
Papsun, Donna-L41, W24
Parente, Alessandra-J31
Park, Chan-Seong-D4
Park, Hyun Jin-D27
Park, Soo-Myu-B37
Parker, Cody-B137
Parker, Glendon-E18
Parker, Taylor-B33
Parra Lopez, Arel-B139
Parrott, Jonathan-J17
Passalacqua, Nicholas-A74
Patch, Michelle-I12
Patel, Simmi-I23
Pauly, David-W19
Peace, Michelle-W10
Pearlman (ret.), Lise-L5, G27, LS1, LW5
Peersall, Juliet-B113
Pecci, Emily-I99
Peer, Michael-H5
Pelletti, Guido-I15, I110
Pennington, Ashley-W5
Perez, Catherine-F128, I50
Perez, Kristina-A67
Perez, Luz-F106
Perlin, Mark-B17, B51, B59
Perna, Shruthi-B29
Peruch, Michela-I72
Peterson, Brianna-L66, W26
Pfeffer, Alexander-B116
Pigariello, Maeva-Y12
Pienkowski, David-D18
PRESENTING AUTHOR INDEX

Pieri, Maria-J14
Pigaiani, Nicola-I63, L51
Pinckard, J. Keith-I42
Pitrone, Claudia-CB3, F129
Pittner, Stefan-I88
Plemmons, Amber-A95
Pletko, Sage-A73
Plourd, Christopher-G1
Podini, Daniele-B50
Poklis, Justin-W10
Pollard, Alexis-B22
Pollard, Alexis-B22
Pollette, Christopher-G1
Plotkin, Sharon-W1
Podini, Daniele-B50
Poklis, Justin-W10
Pollard, Alexis-B22
Polonitza, Austin-A117
Polston, Carrie-S1, W2
Poulos, Christopher-B115
Pozzi, Mark-D17, I10, I2, J2
Prahlow, Joseph-I76
Pressley, DeMia-L40
Privitera, Federico-F7
Procopio, Noemi-B136, B146
Proulx, Michelle-F3
Prunty, Sarah-F46
Pulpito, Giulio-F69, F130, F132, I10, J2
Quigley-McBride, Adele-F86
Radaelli, Davide-I25
Raffaele, Roberto-F130, I10
Rahm, Joseph-B8
Rake, Gloria-I70
Rajkumar, Anita-J15
Ramsland, Katherine-J21
Rani, Deepika-C6
Raudabaugh, Sandra-K17
Rawls, Erin-B93
Ray, Anyesha-K12
Reck, Sophia-K30
Reczek, Karen-W7
Reich, Arielle-A64
Reid, Rebecca-Y2
Reinart, Leonard-F99
Reinders, Stephanie-C9, K16
Reining, Jordan-I97
Renard, Laura-J17
Reveil, Laerissa-B153
Rhimesmith-Carranza, Jennifer-I78
Rhodes, Ciara-B47
Rich, Dayla-S1
Richetelli, Nicole-B52
Rieders, Michael-W26
Rippoly, Michelle-F34
Ritorto, Vincenzo-F69, F132, I102, J2
Rivera, Justin-B135
Rivera-Miranda-Teomie-F103
Roberson, Jordan-B11
Roberts, Graham-H12
Robinson, Elizabeth-F61
Robledo, Ivanna-A110
Rocuzzo, Salvatore-C21
Rogers, Marcus-C11, C27
Rohrer, Charles-I101
Roisch, Sarah-B54
Ropero-Miller, Jeri-I53
Rosales, Crystal-B163
Rosenbaum, David-I60
Rosenblatt, Terri-W25
Rosini, Umberto-F132
Ross, Jennifer-I100
Rossi, Lea-Helena-B82
Roux, Claude-W5, B69, B70
Roy, Tiffany-W4, W17, G11
Rue, Emily-S1
Runge, Teresa-A81
Russo, Ilenia-I120
Sabatino, Mirella-I12
Sacco, Matteo-F69, F124, F130, F132, H18, I10, I63, I102, I112, J2, J28
Sale, Pamela-W25
Salyards, Michael-W20
San Pietro, David-W14
Sanchez, Alyssa-F48
Sanchez, Victoria-Y25
Sandicki, Nurdan-Y4
Sandu-Kirmer, Raman-F9
Sanford, Michelle-I82
Sanger, Robert-B60, G14
Santoro, Paola-I124
Santos, Agostinho-I64
Santurro, Alessandro-J2
Sapan, Tugba Unsal-D30, E3, G17
Sapienza, Daniela-I59
Sarancha, Julianne-A46
Sathyavagiswaran, Lakshmanan-F98
Saunders, Amanda-I99
Saunders, Christopher-B81
Sawyer, Samantha-I85
Scafidi, Katherine-E11
Schackmuth, Madison-L45
Schaffer, Tori-B156
Schneeweis, Lynn-G29
Schultz, Megan-Y22
Schwing, Sarah-A116
Scott, Corey-S1
Scott, Laura-F75
Scotto, Adriana-J14
Sebatian, Ihsan-I8
Sebewan, Ismael-F8
Sehrawat, Jagmahan-A12, A21, A55, A66, F135, H6
Seidel, Andrew-A75
Segula, Kathleen-E15
Seo, Young-II-B37, B165, B166
Seppini, Giuseppina-F87
Servoies, Audrey-F14
Sessa, Francesco-F49, F50
Sgheiza, Valerie-A86
Sguglia, Joanne-B42
Shahid Hussain, Al-D8, D9, D13, F113
Shah, Megha-H19
Shaidman, Vivian-W9
Shapiro, Aaron-W24
Sharma, Meenakshi-I17
Shelton, Donald-G28, G38, S1
Sheth, Nidhi-B53
Shi, Chen-C10
Shnaidman, Vivian-G37, J23, W9
Shuda, Sarah-B88, B157
Sierra, Estrella-F4
Sinha, Sudhir-B42
Siodambro, Chiara-F123
Sisco, Edward-B125
Skinner, Jessica-A43
Smiley-McDonald, Hope-F96
Smith, Alexander-A118
Smith, Ashley-A70
Smith, D. Hudson-W8
Smith, E. Allyn-C28
Smith, Jeff-C8
Smith, Joshua-I68
Smith, Kathleen-B97
Smith, Patricia-CB1
Smith, Rebecca-L14
Smith, Robert-G32
Smith, Ryan-L57
Smugeresky, Steven-W21
Snedeker, Jennifer-B90
Snelly, Austin-C24
Sofine, Anna-G36
Soler, Angela-A31
Song, John-B78
Soto Martinez, Miriam-A14
Speck, Patricia-E1, E12, E13
Spessard, Angela-W17
Spina, Federica-I48, I107, St. Germain, Deborah-E12
Stacey, Brooke-E21
Stallworth, John-B108
Stanback, Nicole-F20, F23
Stassi, Chiara-I43, I59
Steiden, Dawnie-S2
Steiger, Giada-A7
Stein, Paul-F11
Stephan, Wendy-W26
Stephens, Kathryn-D32
Stern, Libby-B65
Strain, Macy-Y24
Stubblefield, Phoebe-F70
Stull, Kyra-W18
Suddock, Jolee-I58
Sunil, Naagar-L31
Sutton, Lera-I46, W1
Svencer, Kaitlynn-Y27
Taglia, Fabiana-B15
Tarallo, Alessandro-F69, F130, F132, J28
Tattoli, Lucia-J27
Tavernese, Palmo-J2
Taylor, Lois-I90
Taylor, Melissa-W17
Teitelbaum, Jeff-F32
Thach, Rasmey-I11
Thakar, Mukesh-B164
Thali, Michael-W3
PRESENTING AUTHOR INDEX

Thekdi, Riya-B98
Thomas, Sarah-W16
Thomas, Tami-E7
Thompson, Robert-G23, G25
Thornton, Jessica-B56
Tica, Cristina-W8
Tichinin, Alina-A112
Tiedge, Teresa-B95
Teixeira, Alyssa-Y23
Tiffon Nonis, Bernat-Noël-J11, J12, J22
Tiscione, Nicholas-W10, L54
To, Denise-W6
Tomasek, Damir-F111
Torrisi, March-F56
Trammell, Lindsay-A23
Tran, Wyonna-Y8
Trevisio, Joe-F92
Trindade, Bruno-B14, G16
Troyer, Sarah-I33
Truong, Lance-I114
Tucker, Kyllia-I55
Turek, Rafal-K23
Turiello, Rachelle-B145, D1
Turnacioglu, Lauren-K14

U

Uramoto, Kyra-B16
Urbanova, Petra-C7
Uren, Ella-C19

V

Valdes, Nicole-B119
Valentine, Julie-E8, E21
Valero, Raymond, W25, G35
Valeros, Michele-F11
Van Buren, Mandi-B126, B127, W21
Van Rijn, Rick-W3
VanBaarle, Alexis-A9
Vance, Breanne-L50
Vanderpuye, Oluseyi-L37
Varotto, Elena-F69
Vastrick, Dirk-S1
Vastrick, Thomas-W23
Vause, Will-B133
Veeseer, Abby-L33
Vendrell-Dones, Mario-B28
Ventura, Monica-B177
Verostick, Kirsten-A109
Vetrini, Raffaella-I44
Vieira, Duarte-W5
Visi, Giacomo-I109
Vitiello, Autilla-D2
Vittorio, Simona-F119, I37
Volner, Jennifer-A29
Volney, Tyrus-A127
Volpini, Laura-G10
Volz, Jessica-S4, E16, E19
Vorburger, Theodore-G25

W

Wales, Gregory-C8
Walraven, Tracy-C26
Walton, Sara-L65
Wandzek, Samantha-B147
Wang, John-B154, F112, F114
Wang, Julia-B41
Warner, Margaret-W24
Warren, Jodie-A-I67
Watanabe, Issie-D28
Waters, David-W16
Webber, Alexis-B89
Webster, Greory-W16
Weidner, Lauren-I81
Weisensee, Katherine-W8
Weiss, Kurt-D11, D37, D39
Wells, Stephen-C1
Whaley, Fantasia-B30
White, Adam-W10
White, Douglas-C24
Whitehead, Frances-B74
Wickenheiser, Ray-W21, W25, B134
Wiersema, Jason-A25
Williams, Anna-F104
Williams, Joyce-E17
Williams, Ken-S1
Williams, Marlon-F83
Wilson, Abigail-B120
Wilson, Walter-B112
Wilson-Taylor, Rebecca-W6, A128
Winburn, Allysha-A51, A76
Winokur, Agnes-B64, W7, W26
Wohlfahrt, Denise-B5, B46
Wolf, Carl-L15, L28
Wontor, Kendall-B176
Woo, Michelle-B96
Wood, Robert-H4
Word, Charlotte-B38
Wotton, Elaine-W22
Wong, Alex-B10
Wong, Cameron-W21
Word, Charlotte-S1
Worrel, Erin-S1

Y

Yie, Hoyong-B166
Yim, An-Di-A19
Yount, Paul-S1

Z

Zaferes, Andrea-F93
Zagaria, Hope-W17
Zainuddin, Muhammad Zaid-H14
Zapico, Sara C.-A85, B45
Zarwell, Lucas-F90
Zedda, Massimo-I94
Zemmel, Joseph-Y18
Zettlemoyer, Brianna-B86