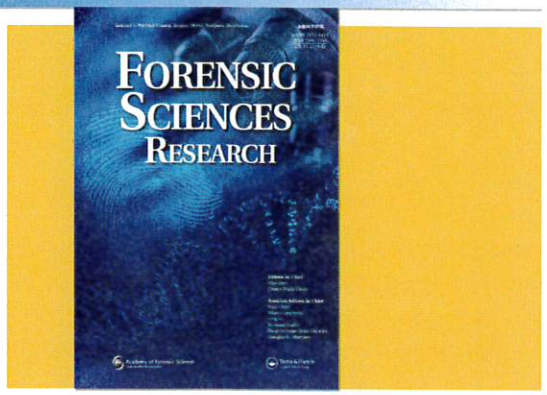
CROSSING BORDERS

PROGRAM

FEBRUARY 17-22, 2020 * ANAHEIM, CA

Forensic Sciences Research



Forensic Sciences Research (***FSR***) is an open access journal publishing high-quality papers, including Research Articles, Reviews, Case Reports, and Letters to Editors. From forensic pathology and criminalistics to digital evidence and quality assurance, *FSR* covers a wide range of topics from authors all around the world. *FSR* is now indexed in the PubMed Central, DOAJ, ProQuest, Scopus and HeinOnline.

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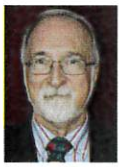

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Vol 4 No 4
Modern Advances in the technological approach to DVI

Guest Editor
Joaquin S. Lucena
Vol 4 No 3
Sudden Cardiac Death

Guest Editor
Douglas H. Ubelaker
Vol 4 No 1 & Vol 3 No 3
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Guest Editor
Zeno J. Geradts
Vol 3 No 3
Digital Forensics

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Tel: +86-21-62716211
Fax: +86-21-52360413
E-mail: fsr@ssfjd.cn

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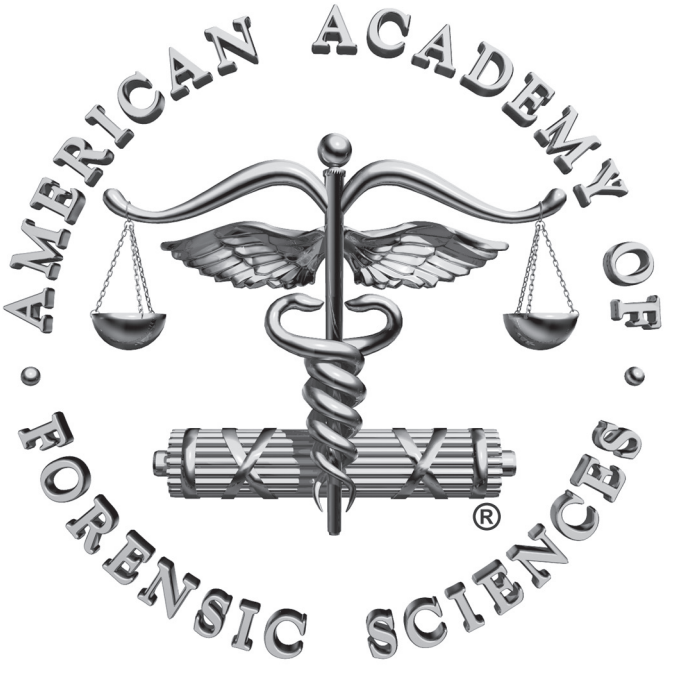
410 North 21st Street
Colorado Springs, Colorado 80904
Phone: (719) 636-1100
Email: info@aafs.org
Website: www.aafs.org



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WELCOME LETTER

Dear Attendees,

It is my high honor and distinct privilege to welcome you to the 72nd AAFS Annual Scientific Meeting in Anaheim, California. I would like to thank the AAFS staff, the many volunteers, and everyone else who have worked together to create an excellent program for this meeting with the theme *Crossing Borders*. You will have many opportunities to meet your colleagues and discuss new challenges in the field.

There are many workshops and special sessions that will be presented. The Interdisciplinary and Plenary Sessions will provide different views in forensic science—past, present, and future. The Young Forensic Scientists Forum will celebrate its 25th Anniversary and is conducting a workshop related to the meeting theme. More than 1,000 presentations are scheduled that will provide you with more insight into the developments in forensic science. The exhibit hall, always interesting to explore, is where you will see the latest forensic science equipment, technology, and literature.

The theme *Crossing Borders* was chosen by me and my colleagues at the Netherlands Forensic Institute (NFI). We see many definitions of crossing borders in forensic science today. For the 2020 meeting, six words starting with the letters "IN" are included in the theme. We start with *International*, since it is linked to crossing borders. Next, *Interdisciplinary*, because so many different disciplines are now working together. We include *Intelligence*, as we see that the combination of different fields, such as criminalistics and artificial intelligence, may provide new opportunities. *Inclusiveness* is also one of the topics that is addressed very well by the AAFS, and additionally looks to diversity within the organization. We should include different opinions on a scientific basis, keeping in mind *Integrity* and *Independence*. I value our members very much, and I believe we should be inclusive regarding different opinions; we should foster our international members, young and old, and all members, maintaining high standards of integrity in forensic science as well as being respectful to each other, even if opinions diverge.

Last, but not least, *Crossing Borders* means finding new solutions that are often interdisciplinary, combining different fields, and finding new methods to solutions—for example, thinking of artificial intelligence as well as forensic intelligence. Currently, we see great progress in artificial intelligence, as computing power is faster and cheaper; however, one of the issues in this instance is explainability in court.

Safe travels and I look forward to seeing you in Anaheim.

Warmest regards,

Zeno Geradts, PhD
2019-2020 President

TABLE OF CONTENTS

ABOUT THE AAFS

For 72 years, the American Academy of Forensic Sciences (AAFS) has served a distinguished and diverse membership. Its 6,600+ members are divided into 11 sections spanning the forensic enterprise. Included among the Academy's members are physicians, attorneys, dentists, toxicologists, anthropologists, document examiners, digital evidence experts, psychiatrists, engineers, physicists, chemists, criminalists, educators, and others. Representing all 50 United States, Canada, and 60 other countries worldwide, they actively practice forensic science and, in many cases, teach and conduct research in the field as well. Each section provides opportunities for professional development, personal contacts, awards, and recognition. Many sections publish AAFS *Newsfeed* articles that keep their members abreast of activities and developments in their fields.

As a professional society dedicated to the application of science to the law, the AAFS is committed to the promotion of education and the elevation of accuracy, precision, and specificity in the forensic sciences. It does so via the *Journal of Forensic Sciences* (its internationally recognized scientific journal), the AAFS *Newsfeed*, its annual scientific meeting, the conduct of seminars and meetings, and the initiation of actions and reactions to various issues of concern. For its members and affiliates, AAFS provides expert witness referrals, job opportunity listings, as well as scientific reference studies. As the world's most prestigious forensic science organization, the AAFS represents its membership to the public and serves as the focal point for public information concerning the forensic science profession. Founded in 1948, the AAFS is headquartered in Colorado Springs, CO.

AAFS Annual Scientific Meeting

Each February, the AAFS scientific meeting gathers together approximately 5,000 world-renowned professionals to present the most current information, research, and updates in their fields. More than 1,000 scientific papers, seminars, workshops, and other special sessions are presented. In addition, approximately 150 exhibitors showcase the cutting-edge technology and services of this ever-changing profession.

Future AAFS Annual Meetings

2021 AAFS Annual Meeting
February 15-20, 2021
George R. Brown Convention Center
Houston, TX

2022 AAFS Annual Meeting
February 21-26, 2022
Washington State Convention Center
Seattle, WA

2023 AAFS Annual Meeting
February 13-18, 2023
Rosen Shingle Creek
Orlando, FL

2024 AAFS Annual Meeting
February 19-24, 2024
Denver Convention Center
Denver, CO

AAFS Headquarters

410 North 21st Street
Colorado Springs, CO 80904
Phone: (719) 636-1100
Fax: (719) 636-1993
Email: membship@aafs.org
Website: www.aafs.org

Anne Warren, Executive Director

GENERAL INFORMATION

Registration Desk Hours

Anaheim Convention Center

Sunday	February 16	1:00 p.m.	-	5:00 p.m.
Monday	February 17	6:45 a.m.	-	5:00 p.m.
Tuesday	February 18	6:45 a.m.	-	6:00 p.m.
Wednesday	February 19	6:45 a.m.	-	5:00 p.m.
Thursday	February 20	6:45 a.m.	-	5:00 p.m.
Friday	February 21	6:45 a.m.	-	4:00 p.m.
Saturday	February 22	7:30 a.m.	-	12:00 p.m.

Exhibit Hall Hours

Anaheim Convention Center

Wednesday	February 19	11:30 a.m.	-	4:00 p.m.
Thursday	February 20	9:00 a.m.	-	2:00 p.m.
AAFS Reception	(Exhibits Open)	6:00 p.m.	-	8:00 p.m.
Friday	February 21	8:00 a.m.	-	12:00 p.m.

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.

Attention Meeting Presenters

The *Journal of Forensic Sciences* encourages authors to submit previously unpublished reports and papers presented at the AAFS annual meeting.

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.

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.

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*Louis P. Regan, MD, LLB 1953-54
*A.W. Freireich, MD 1954-55
*Fred E. Inbau, BS, LLB, LLM 1955-56
*Alan R. Moritz, MD 1956-57
*Val B. Satterfield, MD 1957-58
*John F. Williams, BS 1958-59
*Ordway Hilton, MA 1959-60
*Russel S. Fisher, MD 1960-61
*S.R. Gerber, MD, LLB 1961-62
*Milton Helpern, MD 1962-63
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*Dwight M. Palmer, MD 1964-65
*Robert B. Forney, PhD 1965-66
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Toxicology:	Sabra R. Botch-Jones, MS, MA; Madeleine J. Gates, PhD
Young Forensic Scientists Forum:	Zain Bhaloo, MSc

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*Milton Helpern, MD 1978
*Rolla N. Harger, PhD 1979
*James T. Weston, MD 1984
*Oliver C. Schroeder, Jr., JD 1987
*Abel M. Dominguez, PhD 1993
Douglas M. Lucas, MSc, DSc 1995
*Kenneth S. Field, MBA 1997
*Sidney Kaye, PhD 1998
*Richard C. Froede, MD 2002
*Joseph H. Davis, MD 2005
Barry A.J. Fisher, MS, MBA 2008
*Kurt M. Dubowski, PhD 2011
James E. Starrs, LLM 2012
Thomas T. Noguchi, MD 2015
Robert E. Gaensslen, PhD 2017
Yale H. Caplan, PhD 2019

Douglas M. Lucas Medalists

Sir Alec J. Jeffreys, DPhil 1999
*Alan S. Curry, PhD 2002
Joseph Almog, PhD 2005
*Clyde C. Snow, PhD 2008
Pierre A. J.-L. Margot, PhD 2011
Duarte N. Vieira, PhD, MD 2014
Douglas H. Ubelaker, PhD 2017
Christophe Champod, PhD 2020

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*Abel M. Dominguez, PhD 1990
*Kenneth S. Field, MBA 1990
*Ordway Hilton, MA 1990
Douglas M. Lucas, MSc, DSc 1990
*Irwin N. Perr, MD, JD 1990
*Kurt M. Dubowski, PhD 1991
*June K. Jones, MS 1991
*Oliver C. Schroeder, Jr., JD 1991
*Clyde C. Snow, PhD 1991
*Robert H. Cravey, BS 1992
*Richard C. Froede, MD 1992
*Emanuel Tanay, MD 1992
*Joseph H. Davis, MD 1993
*Anthony Longhetti, BA 1993
*Don Harper Mills, JD, MD 1993
William M. Bass III, PhD 1994
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*David J. Purtell, PhD 1994
*Charles J. Stahl III, MD 1995
*Irving Sunshine, PhD 1995
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*Homer R. Campbell, Jr., DDS 1998
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*James V.P. Conway 2000
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Douglas H. Ubelaker, PhD 2016
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Virginia A. Lynch, MSN 2018
Carol E. Henderson, JD 2019
Betty Layne DesPortes, JD, MS 2020
Iain A. Pretty, BDS, PhD 2020

AAFS Outstanding Early Career Achievement in Forensic Science Award Recipients

Cliff Akiyama, MPH, MA 2016
Kristina L. Hoffman, PSM 2017
Lavina Iancu, PhD 2018
Daniel E. Mabel, MS 2019
Audrey M. Williams, PhD 2020

* Deceased

DISTINGUISHED FELLOW

Betty Layne Desportes, JD, MS

Betty Layne DesPortes is a criminal defense attorney with the firm Benjamin & DesPortes, in Richmond, VA. She received her JD from the University of Virginia School of Law and her MS in Forensic Science from Virginia Commonwealth University.

Betty Layne's service to the Academy includes terms as Vice President, Treasurer, President-Elect, President, and Immediate Past President. She has served on more than 20 Academy-wide committees and currently serves on seven. She was a Trustee of the Forensic Sciences Foundation from 2011–2018, serving as Secretary and Chair. She is a recipient of the Kenneth S. Field Award and the Harold A. Feder Award.

She was the managing author of the 6th and 7th editions of the textbook, *Scientific Evidence in Civil and Criminal Cases*, and the Editor of the Law Section of the online *Wiley Encyclopedia of Forensic Science*, for which she authored seven articles on forensic science subjects. She taught Scientific Evidence at the University of Richmond School of Law for seven years. During her membership in the Academy since 1995, she has made at least 18 presentations at the Academy Annual Scientific Meeting or associated organizational meetings.

Her involvement in other peer group organizations include the American Bar Association, the National Association of Criminal Defense Lawyers, and the American Board of Criminal Lawyers, as well as state and local bar associations. In 2014, she was recognized by Virginia Lawyers Media as an Influential Woman of the Year.

Betty Layne has actively sought reform of the State of Virginia's indigent defense system and is committed to improving indigent defense forensic resources.

In 1996, Betty Layne and her law partner, Steve Benjamin, obtained a landmark Virginia Supreme Court decision recognizing the constitutional right of an indigent criminal defendant to expert forensic assistance. Since 2005, she has assisted with speaker recruitment and planning of the Virginia Chief Justice's Advanced Indigent Criminal Defense Training Seminar.

In 2001, Betty Layne and Steve obtained the exoneration and release of Jeffrey David Cox, who was serving a life sentence for a murder he did not commit. In 2016, they obtained the release of Mark Lawrence Weiner, who had been wrongfully convicted of abduction.

Please offer your congratulations to Betty Layne DesPortes, AAFS Distinguished Fellow!

DISTINGUISHED FELLOW

Iain A. Pretty, BDS, PhD

Dr. Iain Pretty is a Professor of Public Health Dentistry at the University of Manchester and has a private forensic consultancy based in Cheshire. Iain received his dental degree from the University of Newcastle, followed by a Masters in Forensic Science from the University of British Columbia, his doctorate from the University of Liverpool, and a Masters of Public Health from the University of Manchester. His research team at the University of Manchester has secured over $15M in research funding over the past decade. He has supervised over 15 PhD students, four of whom undertook forensic projects relating to bitemarks and identifications.

Iain obtained his membership followed by fellowship of the Royal College of Surgeons of Edinburgh and is also a fellow of the Forensic Science Society and the Faculty of Clinical Informatics. He is a member of the British Association of Forensic Odontology and the British Academy of Forensic Science.

Iain's service to the Academy includes terms as Annual Meeting Program Committee Section Chair, Secretary and Chair of the Odontology Section, Nominating Committee member, and he is one of the first cohort of Associate Editors for the *Journal of Forensic Sciences* where he has enjoyed contributing to the team effort that has produced outstanding results in terms of manuscript turnaround and impact factor. During his membership in the Academy since 2001, he has made seven presentations at the Academy Annual Scientific Meeting and co-authored 15 others.

Iain has authored more than 150 peer-reviewed articles with over 35 in forensic science concentrating on the science of bitemark assessments and has contributed to numerous book chapters. Iain published a bitemark severity and significance scale that is used in both academic and investigative departments around the world. With his co-authors, Iain was one of the first to investigate the reliability and accuracy of bitemark comparisons and later added to this work with an assessment of the relationship between poor evidence quality and wrongful convictions relating to odontology evidence. His papers are some of the most highly cited in odontology and continue to be used in courts around the world, and most recently in a landmark United Kingdom case where bitemark analysis was limited based on the shared concerns over the reliability of such evidence.

Iain has limited his forensic practice for the past decade on the identification of found human remains and providing pro-bono support to organizations undertaking post-conviction work or who challenge the use of bitemarks in courts around the world. He has been involved in helping innocence teams release wrongfully convicted individuals, and, most recently, with his colleague Dr. Adam Freeman, contributed to the release of Mr. Gary Cifizzari, who has spent 35 years in prison, based largely on erroneous bitemark evidence. He has also contributed a written response to the United Kingdom's Criminal Cases Review Commission on a bitemark case that may present the individual who has secured an appeal in England based on erroneous bitemark evidence.

Iain was one of three forensic dentists who provided written and verbal testimony to the Texas Forensic Science Commission (TFSC) who examined the use of bitemark analysis following the wrongful conviction of Mr. Steven Chaney (who was incarcerated for 32 years), asking for the use of such evidence to be limited. The landmark decision of the TFSC to support a moratorium of bitemark evidence in criminal matters remains in place today.

Our congratulations to Iain Pretty, AAFS Distinguished Fellow!

AWARDS

The **Distinguished Fellow Awards** and the **Outstanding Early Career Achievement in Forensic Science Award** will be presented on Wednesday, February 19, during the AAFS Annual Business Meeting. Please join us in acknowledging your most distinguished colleagues as they are presented with these prestigious awards.

Distinguished Fellows

Betty Layne DesPortes, JD, MS and Iain A. Pretty, BDS, PhD

Outstanding Early Career Achievement in Forensic Science Award

Audrey M. Williams, PhD

2020 Section Award Honorees

Section Awards will be presented during Section Business Meetings, also on Wednesday, February 19 (see Section Business Meeting start times on page 14). The Section Award recipients will be acknowledged again before the entire membership during the AAFS Annual Business Meeting.

Anthropology Section's	
T. Dale Stewart Award	H. Gill-King, PhD
J. Lawrence Angel Award	Saskia Ammer, MSc
Ellis R. Kerley Research Award	Gregory E. Berg, PhD
Outstanding Mentorship Award	Dennis C. Dirkmaat, PhD
Diversity & Inclusion Award	Mariah E. Moe, MA
Criminalistics Section's	
Paul L. Kirk Award	Jose R. Almirall, PhD
Mary E. Cowan Outstanding Service Award	Matthew R. Wood, PhD
Meritorious Service Award	Jennifer S. Mihalovich, MPH
Digital & Multimedia Sciences Section's	
Outstanding Case Study Award	Brandon Epstein, BS Marla E. Carroll, BS
Outstanding Research Award	Nicole R. Odom, MSFS Jesse M. Lindmar Josh Brunty, MS Catherine G. Rushton, EdD
Engineering & Applied Sciences Section's	
Founders Award	Michelle R. Hoffman, MS
General Section's	
John R. Hunt Award	Paul E. Kish, MS
Paul W. Kehres Meritorious Service Award	Joanna L. Collins, MFS
Odontology Section's	
Lester Luntz Award	Richard A. Weems, DMD
Reidar F. Sognnaes Award of Excellence in Forensic Odontology	Patrick W. Thevissen, PhD
Pathology/Biology Section's	
Milton Helpern Award	Duarte Nuno Vieira, PhD, MD
Award for Achievement in the Forensic Life Sciences	John R. Wallace, PhD
Forensic Biologist Trainee Paper Award	Mitchell Messner, BA

AWARDS

Psychiatry & Behavioral Science Section's	
Rosner Best Paper Award	Cristina Secarea, MD
Questioned Documents Section's	
Maureen Casey-Owens Award for Best Paper or Poster	Nina Harnarine, BSc
Ordway Hilton Award	Linda L. Mitchell, BS
Toxicology Section's	
Irving Sunshine Award	Nathalie A. Desrosiers, PhD
Ray Abernethy Award	Eric S. Lavins, BS
Rolla N. Harger Award	Christine Moore, PhD, DSc
June K. Jones Scholarship	Haley Mulder, BS

The following awards will be presented on Wednesday, February 19, during the AAFS Annual Business Meeting. You'll want to be present to congratulate the recipients!

Humanitarian and Human Rights Resource Center's Clyde Snow Award

Duarte Nuno Vieira, PhD, MD

Ambassador of Forensic Science Award

The New York County District Attorney's Office

FSF Emerging Forensic Scientist Award

Helen M. Brandt, MS
Carrie Polston, BA
Ellyn A. Zeidman, MS

FSF CRC Press Student Travel Grant and Book Prize

Sophia R. Mavroudas, MA

FSF Warren-Young Scholarship

Pamela Carman, BA

FSF Henry C. Lee Scholarship

Giacomo Musile, PhD

California Association of Criminalists Regional Award

Eric Halsing, BA

FSF Jan S. Bashinski Criminalistics Graduate Thesis Assistance Grant

The FSF Jan S. Bashinski Criminalistics Graduate Thesis Assistance Grant will be presented on Wednesday, February 19, during the Criminalistics Section Business Meeting. Mr. Cameron will be acknowledged again during the AAFS Annual Business Meeting.

Cameron M. Longo, BS

SECTION BUSINESS MEETINGS

The Sections of the American Academy of Forensic Sciences will hold their annual business meetings on Wednesday, February 19. Some of the sections will hold a luncheon prior to the start of the business meeting. **All Section Luncheons require pre-registration.** This is your opportunity to participate! Please attend and contribute to your section's future plans. Specific times are noted below:

Section	Luncheon	Business Meeting
Anthropology		2:00 p.m. - 3:45 p.m.
Criminalistics*	12:00 p.m. - 1:00 p.m.	1:00 p.m. - 3:45 p.m.
Digital & Multimedia Sciences**	12:30 p.m. - 1:45 p.m.	2:00 p.m. - 3:45 p.m.
Engineering & Applied Sciences		2:00 p.m. - 3:45 p.m.
General**	12:00 p.m. - 1:30 p.m.	1:45 p.m. - 3:45 p.m.
Jurisprudence**	12:00 p.m. - 1:45 p.m.	2:00 p.m. - 3:45 p.m.
Odontology		2:00 p.m. - 3:45 p.m.
Pathology/Biology**	12:00 p.m. - 1:15 p.m.	1:30 p.m. - 3:45 p.m.
Psychiatry & Behavioral Science**	12:00 p.m. - 1:45 p.m.	2:00 p.m. - 3:45 p.m.
Questioned Documents		2:00 p.m. - 3:45 p.m.
Toxicology**	12:00 p.m. - 1:45 p.m.	2:00 p.m. - 3:45 p.m.

* This luncheon requires pre-registration and is open only to members of the Criminalistics Section.
** These luncheons require pre-registration.

Attend the Annual Business Meeting of Fellows and Members to Win a Complimentary Meeting Registration!

The Annual Business Meeting of the Fellows and Members of the AAFS will be held Wednesday, February 19, at 4:15 p.m., at the Anaheim Convention Center. 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 2020-21 Officers, consideration of bylaw amendments, presentation of the Distinguished Fellows and Outstanding Early Career Achievement in Forensic Science Awards, and recognition of all Members being promoted to Fellow status. You also will be briefed on AAFS activities during the past year and plans for the future.

As an incentive to attend, all Fellows and Members present will automatically be entered in a drawing for a complimentary meeting registration to attend the 2021 AAFS Annual Scientific Meeting in Houston, TX.

RECEPTIONS

Welcoming Reception — Tuesday, February 18 — 6:00 p.m. - 8:00 p.m.

This opening event is your opportunity to meet old friends and to make new acquaintances. Snacks and cash bars will be available.

AAFS 72nd Annual Wine & Cheese Reception — Thursday, February 20 — 6:00 p.m. - 8:00 p.m.

The AAFS Wine & Cheese Reception will be held to celebrate what promises to be an excellent 2020 program and to toast your return to the Academy's 73rd Annual Scientific Meeting in 2021 (Houston, TX)!

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 have been submitted for physicians, nurses, and dentists. Attorneys may request CLE credit; please see the "Legal" section on page 19.

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, breaks, and lunches 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 documentation regarding 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

Faculty Disclosure Policy

As a sponsor of continuing education, the American Academy of Forensic Sciences must insure balance, independence, objectivity, and scientific rigor in all its educational activities. All faculty participating in a sponsoring activity are expected to disclose any significant financial interest or other relationship: (1) with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services discussed in an educational presentation; and, (2) with any commercial supporters of the activity. (Significant financial interest or other relationship can include such things as grants or research support, employee, consultant, major stockholder, member of speaker's bureaus, etc.) AAFS has an established policy regarding conflicts of interest that includes decisions the Program Committee members may make in selecting content for the Annual Scientific Meeting Program. By serving on the committee, regardless of role, each member has agreed to comply with Section 1.4.7. of the *AAFS Policy and Procedure Manual*.

To serve on the 2019-20 Program Committees, it is required that AAFS staff members, program committee members, and reviewers complete a Conflict of Interest form before they are provided access to review submissions for the program. For continuing education accreditation purposes, the disclosed relationships are published below so that learners are aware of the nature of any relationships that may impact the selection of presentations for the program. If a committee member failed to provide complete disclosure of a relevant financial interest or relationship, the committee member or reviewer was not allowed to serve. The executed Faculty Conflict of Interest forms are on file in the AAFS Office.

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.

CONTINUING EDUCATION

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.

CE Credit: Varies from 1.5 credit hours to 16 credit hours.

Breakfast/Luncheon Seminars
Purpose: To provide an opportunity for presentation and discussion of relevant historical and current topics of forensic science interest related to specific case investigations, or general or specific investigative needs and procedures, methodologies, and testimony.

Learning Overview: Detailed individually in each breakfast/luncheon seminar announcement and description.

CE Credit: Designated for a maximum of .75 credit hour for Breakfast Seminars and 1.0 credit hour for Luncheon Seminars.

Plenary Session
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.

CE Credit: Designated for a maximum of 2.25 credit hours.

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 presentation.

CE Credit: Varies according to the individual's session attendance. Designated for a maximum of 25.0 credit hours.

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 presentation.

CE Credit: Designated for a maximum of 2.0 credit hours.

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 varous 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 at the registration desk. The completed forms must be returned to AAFS by the designated deadline.

Joint Accreditation Statement

JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, this activity has been planned and implemented by the Postgraduate Institute for Medicine and the AAFS. Postgraduate Institute for Medicine in jointly accredited by the American 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 49.75 *AMA PRA Category 1 Credit(s)*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Dental 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. Postgraduate Institute for Medicine designates this activity for 49.75 continuing education credits. Concerns or complaints about a CE Provider may be directed to the provider or to ADA CERP at www.ada.org/cerp.

Legal 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 Credit

A general non physician certificate of attendance will be available.

General Credit

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

FINANCIAL CONTRIBUTORS

The American Academy of Forensic Sciences would like to thank the following supporters for their contributions to the 2020 AAFS 72nd Annual Scientific Meeting:

Agilent

American Polygraph Association

Cayman Chemical Company

Ellis R. Kerley Forensic Sciences Foundation

Foster & Freeman

Lemos Toxicology Services, LLC

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Magnet Forensics

NMS Labs, Inc.

Price-Hansen and Associates, LLC

Promega

RTI International

SCIEX

Shimadzu Scientific Instruments, Inc.

The Center for Forensic Science Research & Education at the Fredric Rieders Family Foundation

Thomson Instrument Company

UTAK

Waters Corporation

Get the most up-to-date meeting information. Download the AAFS 2020 Guidebook Mobile App

Schedules, Maps, Exhibitor information, and more are available on your mobile device - **completely free**.

Download **Guidebook** on the Apple App Store or Android Marketplace, or visit: https://guidebook.com/g/aafs2020/.

STUDENT ACADEMY

Pre-Registration was required.

Tuesday

February 18, 2020 **9:00 a.m. - 2:00 p.m.**

The purpose of the Student Academy of Forensic Sciences is to bring to the attention of local area high school and college 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. All high school and college-age students are welcome to attend.

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 L. Knight, MS
George Mason University
Fairfax, VA

Digital & Multimedia Sciences:
Jason Lewis, PhD
Department of Computer Science & Engineering
University of South Florida
Tampa, FL

Douglas S. Lacey, BS
BEK TEX LLC
Stafford, VA

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

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

T.L. Williams, MFS
Fredericksburg, VA

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

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

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

Psychiatry & Behavioral Science:
Eleanor B. Vo, MD
OmaDesala Psychiatric Services
Ewing, NJ

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

Toxicology:
Phillip M. Kemp, PhD
Aviation Safety, FAA
Oklahoma City, OK

Sabra R. Botch-Jones, MS
Boston University School of Medicine
Biomedical Forensic Sciences
Boston, MA

INTERDISCIPLINARY SYMPOSIUM

On-Site registration is available—$75

S1 Progress in the Forensic Sciences Since the 2009 National Academy of Sciences (NAS) Report

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **6.5 CE Hours**

Chair:
Jan Seaman Kelly, BA
Forensic Dynamics LLC
Las Vegas, NV

Faculty:
Vanessa Antoun, JD
National Association of Criminal Defense Lawyers
Washington, DC

Joye M. Carter, MD
San Luis Obispo County Sheriff-Coroner Office
San Luis Obispo, CA

Eoghan Casey, PhD
University of Lausanne School of Criminal Justice
Lausanne, Vaud, SWITZERLAND

Stephanie Domitrovich, JD, PhD
Sixth Judicial District of PA
Erie, PA

Gregory Dutton, PhD
National Institute of Justice
Washington, DC

John J. Lentini, BA
Scientific Fire Analysis, LLC
Islamorada, FL

Co-Chair:
Kristy Kadash, PhD
Jefferson County Regional Crime Lab
Golden, CO

Barbara L. Needell, DMD
Monument, CO

Sharon L. Plotkin, MS
Miami Dade College
Miami, FL

Michael J. Salyards, PhD
Compass Scientific Consulting LLC
Sharpsburg, GA

Tobin A. Tanaka, BS
Canada Border Services Agency
Ottowa, ON, CANADA

Robert M. Thompson, MFS
National Institute of Standards and Technology
Gaithersburg, MD

Sheila Willis, PhD
National Institute of Standards and Technology
Gaithersburg, MD

Learning Overview: Attendees will have an appreciation of the impact the 2009 Report by the NAS, *Strengthening Forensic Science in the United States: A Path Forward*, has had on several forensic disciplines.

Impact on the Forensic Science Community: Forensic sciences have been under the shadow of the NAS Report for the past ten years. This symposium will impact the forensic science community by providing an update on the state of many disciplines with respect to method reliability and testimonial boundaries, both of which were called into question by the NAS Report.

Program Description: The Interdisciplinary Symposium will bring together speakers from a wide range of disciplines who will discuss their responses to the recommendations listed in the 2009 NAS Report, *Strengthening Forensic Science in the United States: A Path Forward*.

On-Site registration is available—$75

S1 Progress in the Forensic Sciences Since the 2009 National Academy of Sciences (NAS) Report

Program Description cont.:

The NAS Report, *Strengthening Forensic Science in the United States: A Path Forward*, commonly referred to as the NAS Report by the forensic community, was released in February 2009 during the Annual Scientific Meeting in Denver, CO. This Report was unprecedented because it brought to light many issues that had been hampering the evolution of forensic science. It provided 13 comprehensive recommendations, starting with the establishment of a National Institute of Forensic Sciences (NIFS). This was described as an independent federal entity designated with the responsibility of supporting and overseeing forensic science across the country. The authors advocated that law enforcement agencies should no longer be the primary administrators of their crime laboratories and that medical examiner systems should replace coroner's offices. Laboratory accreditation, individual examiner certification, and standardization of procedures were additional recommendations proposed in the NAS Report. Two significant recommendations to the forensic sciences, more specifically to the pattern-based evidence disciplines, revolved around: (1) improving their scientific foundations and reliability through research and validation, and (2) ensuring the accuracy of testimony offered by experts in court. Many of the NAS recommendations have not come to fruition, including the creation of NIFS. However, changes have occurred in response to some of the recommendations. Various questions can be posed to assess the impact of those changes. Has the community devoted time and resources to validating current techniques and methods? Are new disciplines embracing the scientific method? What does a "match" or an "identification" mean today? How conclusively are examiners allowed to state their results? What does the future hold for forensic expert testimony? Have court systems outside of the United States taken any notice of the changes occurring here?

This year's symposium will feature 13 speakers across both scientific and national borders who will provide their perspectives on how the NAS Report has changed (or not) their business practices over the past decade. Many of the forensic disciplines discussed in the report will be addressed, including DNA, friction ridge, firearms, documents, odontology, and digital/multimedia evidence examination. Responses in crime scene analysis and medicolegal investigations will be presented as well. Members of the legal community will also share their thoughts on how they interpret the conclusions made by forensic experts in written reports and in trial. In addition, the efforts of the National Institute of Justice (NIJ) to fund research in these areas will be discussed. This symposium intends be a valuable session to forensic science practitioners, managers, and legal representatives.

Program:

8:30 a.m.	-	9:00 a.m.	**Transparency and Consistency in Trial Testimony for Medical Examiners** *Joye M. Carter, MD*
9:00 a.m.	-	9:30 a.m.	**The Validity of Forensic Odontology in Criminal Investigations** *Barbara L. Needell, DMD*
9:30 a.m.	-	10:00 a.m.	**Presenting Crime Scene Analysis to a Jury** *Sharon L. Plotkin, MS*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	10:45 a.m.	**Supporting Research and Development in the Areas of Impression and Pattern Evidence** *Gregory Dutton, PhD*
10:45 a.m.	-	11:15 a.m.	**Questioned Documents in International Justice Matters** *Tobin A. Tanaka, BS*
11:15 a.m.	-	11:45 a.m.	**Much Work Still to be Done** *Vanessa Antoun, JD*

On-Site registration is available—$75

S1 Progress in the Forensic Sciences Since the 2009 National Academy of Sciences (NAS) Report

Program cont.:

11:45 a.m.	-	1:15 p.m.	**Lunch**
1:15 p.m.	-	1:45 p.m.	**Developing Methods for Objective Firearm Examination** *Robert M. Thompson, MFS*
1:45 p.m.	-	2:15 p.m.	**Impact of NAS Report on Forensic Document Examination** *Jan Seaman Kelly, BA*
2:15 p.m.	-	2:45 p.m.	**The Importance of a Scientific Framework to the Application of Digital Evidence Analysis** *Eoghan Casey, PhD*
2:45 p.m.	-	3:15 p.m.	**The Fire Investigation Profession's Response to the NRC Report** *John J. Lentini, BA*
3:15 p.m.	-	3:30 p.m.	**Break**
3:30 p.m.	-	4:00 p.m.	**The Development and Implementation of Statistical Interpretation Software for Friction Ridge Skin Impressions (FRStat)** *Michael J. Salyards, PhD*
4:00 p.m.	-	4:30 p.m.	**Borders or Barrier: Forensic Science Since NAS 2009** *Sheila Willis, PhD*
4:30 p.m.	-	5:00 p.m.	**Role of the Gatekeeper Since the NAS** *Stephanie Domitrovich, JD, PhD*

YOUNG FORENSIC SCIENTISTS FORUM

On-Site registration is available—$0

S2 25 Years of Crossing Borders: Young Forensic Scientists and Their Collaborations

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **6.0 CE Hours**

YFSF Chair:
Zain Bhaloo, MSc
Canada Border Services Agency
Ottawa, ON, CANADA

YFSF Committee Members:
Brittany N. Beyer, MS
Houston Forensic Science Center
Houston, TX

Amber J. Smith, MSFS
Houston Forensic Science Center
Houston, TX

Ex-Officio:
Alex J. Krotulski, MS
Center for Forensic Science Research & Education
Willow Grove, PA

Program Chair:
Catherine O. Brown, MSFS
Center for Forensic Science Research & Education
Willow Grove, PA

Program Co-Chair:
Hannah N. Simmons, BS
Raleigh, NC

Learning Overview: After attending this presentation, attendees will better understand forensic science and how everyone's work can impact and enhance other scientists, and vice versa, regardless of the discipline. In addition, attendees will learn about the advantages and importance of proper resume writing and interviewing skills.

Impact on the Forensic Science Community: The Young Forensic Scientists Forum (YFSF) has historically provided a venue for those forensic scientists with less than five years of professional experience to interact with, and further integrate into, their prospective fields as well as to learn about all the other disciplines. The YFSF should provide the space and opportunity for attendees/speakers to grow, develop, network, and learn from one another. This will allow young scientists the confidence to progress in their fields and one day hopefully provide the same opportunity to another young scientist.

Program Description: This special session provides necessary information to young forensic scientists regarding the various disciplines within the AAFS and will serve as a forum to exchange, discuss, and cultivate new ideas. This full-day program has been put together to cover a wide range of topics and inform attendees as to how these topics relate to other, sometimes unrelated, disciplines, techniques, and individuals. The YFSF aims to show all young forensic scientists that what makes us special isn't just who we are alone, but also who we are together.

Every year the American Academy of Forensic Sciences draws in thousands of globally recognized experts and professionals to present research, hold workshops, and showcase the various disciplines represented within the Academy. Further, the YFSF offers two opportunities for young forensic scientists to present their own work or research: the Bring Your Own Posters (BYOP) Session and the Bring Your Own Slides (BYOS) Session.

The session will feature speakers from many of the AAFS sections who will discuss their work and how they crossed borders, figuratively and literally, to collaborate with other disciplines. Through these presentations, attendees will learn how experienced practitioners and professionals have contributed to forensic science as a whole and how their work has benefitted from and was helped by interdisciplinary combining of knowledge bases. With a rapid push for specialization within a given discipline, it has remained vital for leaders in forensic science to remember the importance of cross-discipline collaboration and partnership. Through this Special Session, forensic experts will provide mentorship to young forensic scientists by inspiring interdisciplinary cooperation in casework, research, and community engagement.

On-Site registration is available—$0

S2 25 Years of Crossing Borders: Young Forensic Scientists and Their Collaborations

Finally, in the spirit of interdisciplinary collaboration and to honor our commitment to improving and advancing communication, for the first time the YFSF is seeking to provide the opportunity to attendees to network with AAFS members and many others to encourage the sharing of information and experiences. This year's Special Session has been re-designed to incorporate a networking morning coffee break where all YFSF attendees and distinguished members from the AAFS sections can meet, mingle, and have discussions. Further, the discussion and resume review panel has been lengthened and will be enhanced by the addition of a speaker specifically addressing resumes and interview preparation, so don't forget to update and bring several copies of your resume with you!

Speakers:

Steven C. Batterman, PhD
Cherry Hill, NJ

Brittany N. Beyer, MS
Houston Forensic Science Center
Houston, TX

Patrick Buzzini, PhD
Sam Houston State University
Huntsville, TX

Melissa A. Connor, PhD
Colorado Mesa University
Grand Junction, CO

Christian Crowder, PhD
Southwestern Institute of Forensic Sciences
Dallas, TX

Vincent J. Desiderio, Jr., MS
United States Postal Inspection Service
Washington, DC

Zeno J. Geradts, PhD
Netherlands Forensic Institute
Den Haag, NETHERLANDS

Emily D. Gottfried, PhD
Medical University of South Carolina
Charleston, SC

Cheryl D. Hunter
American Academy of Forensic Sciences
Colorado Springs, CO

Alex J. Krotulski, MS
Center for Forensic Science Research & Education
Willow Grove, PA

Nikolas P. Lemos, PhD
Lemos Toxicology Services
San Francisco, CA

Amber J. Smith, MSFS
Houston Forensic Science Center
Houston, TX

Douglas H. Ubelaker, PhD
Smithsonian Institution
Washington, DC

Dirk Vastrick, BA
Dirk Vastrick Presents
Spokane Valley, WA

Thomas W. Vastrick, BS
Apopka, FL

On-Site registration is available—$0

S2 25 Years of Crossing Borders: Young Forensic Scientists and Their Collaborations

Program:

8:30 a.m.	-	8:40 a.m.	**Introduction to the YFSF 25th Anniversary Special Session** *Zain Bhaloo, MSc*
8:40 a.m.	-	8:55 a.m.	**Opening of the 25th Anniversary Special Session** *Zeno J. Geradts, PhD, Steven C. Batterman, PhD*
8:55 a.m.	-	9:20 a.m.	**The Humanitarian and Human Rights Resource Center (HHRRC)** *Douglas H. Ubelaker, PhD*
9:20 a.m.	-	9:35 a.m.	**Membership in the AAFS** *Cheryl D. Hunter*
9:35 a.m.	-	10:00 a.m.	**Forensic Anthropology and the Medical Examiner/Coroner System** *Christian Crowder, PhD*
10:00 a.m.	-	11:00 a.m.	**YFSF 25th Anniversary Networking and Q&A Coffee Break**
11:00 a.m.	-	11:25 a.m.	**Overview of Forensic Psychiatry/Psychology** *Emily D. Gottfried, PhD*
11:25 a.m.	-	11:50 a.m.	**Proactively Creating Your Opportunities for Employment as a Forensic Document Examiner** *Thomas W. Vastrick, BS*
11:50 a.m.	-	1:20 p.m.	**Lunch**
1:20 p.m.	-	1:45 p.m.	**Specifics on the General Section** *Melissa A. Connor, PhD*
1:45 p.m.	-	2:10 p.m.	**Influx of Synthetic Drugs Into the United States and a Young Scientist's Impact** *Alex J. Krotulski, MS*
2:10 p.m.	-	2:35 p.m.	**Diversity: A Global Asset Available in Your Neighborhood** *Nikolas P. Lemos, PhD*
2:35 p.m.	-	2:50 p.m.	**Break**
2:50 p.m.	-	3:15 p.m.	**The Methodology of Criminalistics Developed … By Crossing Borders** *Patrick Buzzini, PhD*
3:15 p.m.	-	3:40 p.m.	**Tales of a Forensic Generalist: From Trace and Tool Marks to Hazardous Materials** *Vincent J. Desiderio, MS*
3:40 p.m.	-	4:05 p.m.	**A Better Resume Tomorrow in Just Three Steps** *Dirk Vastrick, BA*
4:05 p.m.	-	4:55 p.m.	**Resume Review and Discussion**
4:55 p.m.	-	5:00 p.m.	**Closing Remarks** *Catherine O. Brown, MSFS, Hannah N. Simmons, BS*

FORENSIC SCIENCE EDUCATION PROGRAMS ACCREDITATION COMMISSION (FEPAC)

Pre-Registration Not Required — Open to All Meeting Attendees

Accreditation of Forensic Science Academic Programs Through the FEPAC

Tuesday

February 18, 2020 **8:30 a.m. – 12:45 p.m.**

Chair:
Dwight E. Adams, PhD
University of Central Oklahoma
Forensic Science Institute
Edmond, OK

Commissioner:
Jason L. Schroeder, MS
Harris County Institute of Forensic Science
Houston, TX

Commissioner:
Patrick A. Eller, MS
Metadata Forensics LLC
Richmond, VA

Commissioner:
Sarah J. Seashols Williams, PhD
Virginia Commonwealth University
Richmond, VA

Accreditation & Outreach Coordinator:
Nancy J. Jackson
American Academy of Forensic Sciences
Colorado Springs, CO

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. Attendees 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: http://fepac-edu.org.

FORENSIC SCIENCE EDUCATION PROGRAMS ACCREDITATION COMMISSION (FEPAC)

Pre-Registration Not Required — Open to All Meeting Attendees

Accreditation of Forensic Science Academic Programs Through the FEPAC

Program:

8:30 a.m.	-	9:00 a.m.	**Introduction and Welcoming Remarks** **Module 1: What to Know About FEPAC** *Dwight E. Adams, PhD*
9:00 a.m.	-	9:30 a.m.	**Module 2: An Overview of the FEPAC Application Process** *Patrick A. Eller, MS*
9:30 a.m.	-	10:00 a.m.	**Module 3: A Review of Self-Study Standards 3.0—General for all Programs** *Jason L. Schroeder, MS*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	10:45 a.m.	**Module 4: A Review of Self-Study Standards 4.0—Undergraduate Programs** *Sarah J. Seashols Williams, PhD*
10:45 a.m.	-	11:15 a.m.	**Module 5: A Review of Self-Study Standards 5.0—Graduate Programs** *Sarah J. Seashols Williams, PhD*
11:15 a.m.	-	11:45 a.m.	**Module 6: Accreditation Decisions and Categories, Appeals Process, Annual Reports, Substantive Changes, and Post-Visit Survey** *Jason L. Schroeder, MS*
11:45 a.m.	-	12:15 p.m.	**Module 7: FEPAC On-Site Evaluator Training** *Dwight E. Adams, PhD*
12:15 p.m.	-	12:45 p.m.	**Questions and Answers** *FEPAC Commissioners and Accreditation & Outreach Coordinator*

Pre-Registration Not Required — Open to All Meeting Attendees

ES1 Dracula, Twilight, and Blood Cults: Why Is It That Vampires Never Die?

Tuesday

February 18, 2020 **8:00 p.m. – 10:00 p.m.**

Corina Freitas, MD*
Syracuse, NY

George D. Annas, MD*
State University of New York
Upstate Medical University
Syracuse, NY

Jarrod A. Marks, MD*
Tufts Medical Center
Boston, MA

Learning Overview: After attending this presentations, attendees will: (1) gain knowledge in the historical, medical, and psychoanalytic theories behind vampire beliefs; (2) advance skills regarding the manner in which "vampirism," "vampire cults," and "vampire communities" may present clinically and forensically; and (3) improve knowledge in historical reports of sadistic mass murder that may have contributed to vampire lore.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by increasing the existing knowledge of the fundamentals of the current field and thus improve forensic competence and performance.

From the ancient world to the present, vampires have held a tight grip on our fascination and fear and this has yet to be released. Traces of the legend are found in some of the oldest surviving mythologies and have spilled over into history and lore. Such mythology associated vampires with female figures representing potential destruction and with children in a state of dependency and helplessness. Similar beliefs are traced to ancient cultures across the globe, often depicting demonic female figures who fused relationships between the living and the dead, expressed through blood rituals as well as sexualized and aggressive exchanges.[1]

However, it was Bram Stoker who introduced us to the great Dracula in the late 19th century, and it was this quintessential Byronic hero who fathered countless other characters. From the monstrous presentations of Nosferatu, and Underworld's Markus, to the charming Lestat and adorable sparkly Edward, and everything in between, our fascination with Dracula and his ever-evolving progeny shows no signs of decay.

In the modern era, some vampires have been transformed from evil beasts to misunderstood, and ostracized, supernatural heroes.[2] With this change, some of their ideologies went from that of those cursed with turmoiled "un-deadness" to those having (and sometimes offering) immortality; from forced isolation to offering a new community; from subhuman viciousness to displaying animal traits that convey energy and natural instincts. Flaunting the appeal of the aristocrat or outlaw, and inciting adventure at once terrifying and safe, the vampires in these stories have "evolved" into uncannily irresistible figures.[3] What is it that so intrigues us about them? Our speakers will lead us on a journey where we can explore this fascination via culture and psychoanalytic theory, as well as historical figures purported to have inspired the legend—tales of which include sadism and mass murder eclipsing any terror found in fiction.

Also discussed will be cases from the early 1800s where misperception of infectious illness caused mass hysteria, leading to the belief that the dead were rising from their graves and literally sucking vitality out of the living. This hysteria ultimately culminated in the cannibalistic rituals of the recently deceased to stop the dead from harming the living. However, such a ritual has been documented as recently as 2003, proving that these seemingly old beliefs from a forgotten time of darkness and irrational superstition for some reason draw appeal to this day.

Indeed, we are far from immune to such seeming madness. Modern vampire "cults" tragically show us how an obsession with these creatures can go too far. What drives such people into these alternate realities? Mental Illness? Sadism? Or is there more complexity to these stories? Perhaps we will never know, but one thing is certain: while legends postulate many ways that vampires may be killed, time has proven that they will, indeed, live forever.

Reference(s):

1. Jaffe, P.D. and F. DiCataldo. Clinical Vampirism: Blending Myth and Reality. *Bulletin of the American Academy of Psychiatry and the Law* 22, no. 4 (1994): 533-44.
2. Melton, J. Gordon and Alysa Hornick. *The Vampire in Folklore, History, Literature, Film and Television: A Comprehensive Bibliography*. Jefferson: McFarland & Company, Publishers, 2015.
3. Bosky, Bernadette Lynn. Making the Implicit, Explicit: Vampire Erotica and Pornography. *In The Blood Is the Life: Vampires in Literature*. Edited by Heldreth, Leonard G. and Mary Pharr. Bowling Green, OH: Bowling Green State University Popular Press, 1999.

ACADEMY CUP

Pre-Registration Not Required — Open to All Meeting Attendees

Wednesday

February 19, 2020 **8:00 a.m. – 8:45 a.m.**

The AAFS 2020 Academy Cup will take place on Wednesday, February 19, before the Plenary Session. Section teams meet at 8:00 a.m., an hour before the Plenary Session, for instruction and team strategy. The game will start at 8:10 a.m. and consist of multiple-choice and true-or-false questions projected onto a screen to test each section's knowledge.

Each section's team is comprised of members, Past President(s), Past Vice President(s), Board Member(s) and/or Section Officer(s), Chair, Secretary, Young Forensic Scientist Forum (YFSF) volunteers, and anyone who wants to play. The YFSF volunteers will be assigned to sections on Tuesday at the YFSF Special Session. The game will be 30 minutes long, then all answer sheets need to be turned in.

The winning team will be announced and the Academy Cup trophy presented at the AAFS Annual Business Meeting (ABM) at 4:15 p.m. that same day. Teams should be present at the ABM to find out who won, and the winning team should be available at the conclusion of the ABM to have a group photo taken.




Academy Cup Committee:

Chair:	Laura L. Liptai, PhD, Engineering & Applied Sciences (liptai@biomedicalforensics.com)
Co-Chair:	Carla Miller Noziglia, MS, Criminalistics
Co-Chair:	Matthew R. Wood, PhD, Criminalistics

Academy Cup Team Leaders:

Anthropology:	Paul D. Emanovsky, PhD; Kristen Hartnett-McCann, PhD
Criminalistics:	Patrick Buzzini, PhD; Noelle J. Umback, PhD
Digital & Multimedia Sciences:	Marla E. Carroll, BS; Jason M. Paroff, JD
Engineering & Applied Sciences:	Darren Franck, MSME; David Pienkowski, PhD
General:	Steven C. Clark, PhD; Melissa A. Connor, PhD
Jurisprudence:	Pamela A.W. King, JD; Robert M. Sanger, JD
Odontology:	Adam J. Freeman, DDS; Roger D. Metcalf, DDS, JD
Pathology/Biology:	Chris Milroy, MD, LLB; Carl J. Schmidt, MD
Psychiatry & Behavioral Science:	Dean DeCrisce, MD; Eleanor B. Vo, MD
Questioned Documents:	Jan Seaman Kelly, BA; Karen J. Nobles, MFS
Toxicology:	William R. Johnson, BA; Sherri L. Kacinko, PhD

Program:

8:00 a.m.	-	8:10 a.m.	Instructions and Introductions of Team Leaders
8:10 a.m.	-	8:40 a.m.	PowerPoint® Questions and Answers
8:40 a.m.	-	8:45 a.m.	Team Answer Sheet Turned in by YFSF Representative for Each Team

PLENARY SESSION

Pre-Registration Not Required — Open to All Meeting Attendees

Wednesday

February 19, 2020 **9:00 a.m. – 11:30 a.m.** **2.25 CE Hours**

Welcoming Remarks

Crossing Borders

Zeno Geradts, PhD

President
American Academy of Forensic Sciences
Den Haag, Netherlands

Plenary Session Chair:
C. Ken Williams, MS, JD
New Jersey State Police Office of Forensic Sciences
Central Regional Laboratory
Hamilton, NJ

Plenary Session Co-Chair:
Julie A. Howe, MBA
Saint Louis University
Doisy College of Health Sciences
St. Louis, MO

Speakers

Thomas F. Callaghan, PhD
Federal Bureau of Investigations
Quantico, VA

John Fudenberg, MBA
Office of the Coroner/Medical Examiner
Las Vegas, NV

David Reichert
Gordon Thomas Honeywell
Auburn, WA

Overview: Advances in technology have played a tremendous role in making many daily routines and extraordinary tasks seem ordinary. Individuals may live in one area but work in a different city, state, or even country. While **crossing borders**, individuals may use personal electronic devices to listen to a book, catch up on the latest news, or participate in conference calls. If using mass transit to make the commute, individuals may even prepare lectures, write publications, or simply crush candy to pass the time. Travel innovations have also made it considerably easier for individuals to attend meetings within their respective countries or at the ***international*** level.

Technological advances can be worthwhile. However, the innovations are often used for nefarious acts as well. Individuals share information across borders to support criminal enterprises; drugs are grown or manufactured in one country and transported to another; firearms purchased in one jurisdiction may be used to commit crimes in another; individuals, often exploited through the hope of a better life across international borders, lose their ***independence*** as they become victims of human trafficking; putative suspects may use available technological advances to avoid apprehension; and these are but a few of the many ways in which ***integrity*** is compromised for personal benefit or gain.

The American Academy of Forensic Sciences is a multidisciplinary organization, representing 11 sections across the forensic sciences with both American and International members. The Annual Scientific Meeting of the AAFS fosters ***inclusiveness*** across all sections, disciplines, and nationalities through collaboration, networking, and the cross-pollination of knowledge across the forensic community. It is beneficial for members of the community to convene to share in successes, to learn from failures, and to acknowledge advances in the field.

PLENARY SESSION

Pre-Registration Not Required — Open to All Meeting Attendees

Crossing Borders

Overview cont.:

This program is designed to allow members of the forensic community to share in the knowledge gained through experience and to learn of advances on the horizon. John Fudenburg will discuss the strengths and weaknesses of the Clark County Coroner/Medical Examiner's Office during the handling of the worst mass shooting in modern United States history. An emphasis will be placed on the ***interdisciplinary*** efforts of the different agencies involved and the various deployment areas necessary during a mass fatality incident. Specific attention will be given to the Family Assistance Center and the on-going mental health/wellness of responders.

Thomas Callaghan will provide an overview of the Federal Bureaus of Investigation's (FBI's) Next Generation Identification and Facial Recognition Programs, along with the FBI's Rapid DNA expansion of the Combined DNA Index System (CODIS) into the booking station. Similarities, differences, and privacy concerns with finger, face, and DNA biometric modalities will be discussed. This presentation will also reveal how DNA databases, like CODIS and Facial Recognition queries of government datasets and online photo galleries, use the Automated Fingerprint Identification System (AFIS) model daily to identify potential perpetrators.

Dave Reichert will share his observations on human trafficking from the perspective of a 34-year career officer who gathered ***intelligence*** as the lead investigator in the Green River Serial Killer case, ultimately bringing justice to the families of the 49 confirmed victims. This presentation will also detail the journey of an investigator to his 14 years as a United States Congressman and, finally, to his present role as an advocate for impactful global forensic policy.

The program will conclude with a shared learning opportunity for the attendees and speakers.

Program:

9:00 a.m.	-	9:10 a.m.	**Welcoming and Opening Remarks** *Zeno Geradts, PhD; C. Ken Williams, MS, JD*
9:10 a.m.	-	9:50 a.m.	**Mass Fatality Preparedness—Lessons Learned From the October 1, 2017, Shooting in Las Vegas** *John Fudenberg, MBA*
9:50 a.m.	-	10:30 a.m.	**Biometrics: Identity Verification and Identity Discovery With Finger, Face, and DNA** *Thomas Callaghan, PhD*
10:30 a.m.	-	11:10 a.m.	**Invisible Children in the World of Global Human Trafficking** *Dave Reichert*
11:10 a.m.	-	11:30 a.m.	**Panel Discussion** *Julie Howe, MBA; Zeno Geradts, PhD; John Fudenberg, MBA; Thomas Callaghan, PhD; Dave Reichert*

Pre-Registration was required.

BS1 Ethno-Cultural and Religious Considerations in the Management of the Dead

Monday, February 17, 2020 **7:00 a.m. – 8:30 a.m.** **.75 CE Hour**

Amber D. Riley, MS*
Deco Education & Consulting
San Diego, CA

Sakher J. AlQahtani, PhD*
King Saud University, College of Dentistry
Riyadh , SAUDI ARABIA

James F. Goodrich, FFOMP*
Cambridge, Waikato, NEW ZEALAND

Learning Overview: After attending this presentation, attendees will have a greater knowledge of the ethics, customs, norms, and taboos surrounding death and the dead for many minority cultures and religions within their professional and personal communities. This presentation will describe several cultures and religions that forensic professionals may encounter in their jurisdictions, both in the United States and worldwide, along with each respective approach to the management of their dead, based upon this better understanding.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by serving to assist the forensic professional in overcoming some of the obstacles that are present when identifying, investigating, and examining a decedent that is a member of these ethno-cultural communities.

Culture and religion profoundly influence many aspects of modern life. These factors also carry forward after death and may affect our management of the deceased. We recognize that increasing human migration across global geographical borders results in decedents sometimes being managed within a culture and community that is foreign to them. Loved ones, family, and members of the integrated community of the deceased also bring expectations, norms, and taboos to a forensic setting, and these influences may at times increase the complexity of and even hinder the process of examination, identification, and release of the dead. Although it is impossible to be intimately familiar with all religions and cultures, we as forensic professionals should be educated and sensitive to the roles each may play in our respective areas of expertise while avoiding the risk of stereotyping the deceased.

It is important to the process and to the outcome that the forensic professional understands not only the ethno-cultural and religious considerations associated with the deceased and other members of the affected community, but also their own and how these may relate to the context and perhaps to any biases that may be subsequently introduced. So, the complexity of the juxtaposition of different cultures and expectations may be multiplied in a situation where the forensic practitioner is anything other than the ideal of absolute neutrality.

The interplay of the deceased's culture and the forensic professional's legal and ethical responsibilities can pose significant challenges when experienced against a backdrop of factors, including gender and acculturation, notably in cases in which there are multiple and/or commingled fatalities being examined at one time in one spatial setting. Varied cultural and religious mores for managing the dead also dictate appropriate disclosures, privacy, and communication with the relatives of the deceased. Some difficulties can at least be partially overcome with an understanding of these sensitivities.

This presentation hopes to highlight many of the unique aspects of the belief systems and social constructs that may be encountered during the career of a forensic professional in the context of the management of the dead, and to provide tools and a framework for increased sensitivity and understanding. This, in turn, will provide an opportunity to allow the dignity and basic human rights of the deceased to perhaps be respected more fully.

Examples will be drawn from many cultural and religious backgrounds, including Islam, Judaism, Christianity, Hinduism, Buddhism, Native American, Maori, and Pasifika peoples.

Pre-Registration was required.

BS2 The Working Stiffs: Writing and Publishing the Experiences of a Forensic Pathologist in Both Fiction and Non-Fiction

Tuesday, February 18, 2020 **7:00 a.m. – 8:30 a.m.** **.75 CE Hour**

Judy Melinek, MD*
PathologyExpert, Inc
San Francisco, CA

T.J. Mitchell, BA*
PathologyExpert, Inc
San Francisco, CA

Learning Overview: The goal of this presentation is to demonstrate how a collaboration between a scientist and a writer can effectuate the communication of complex forensic concepts to a lay audience.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by helping attendees be able to communicate scientific concepts to a lay audience, in writing and in testimony, and by navigating issues pertaining to confidentiality of medical information.

This presentation takes as its thesis the importance of reflecting scientific rigor in writing both non-fiction and fiction for a lay audience. The challenges of writing while continuing to testify as an expert witness in real-life criminal and civil court cases will be explored. In addition, the perpetual tension between fiction and science—maintaining a balance between narrative demands and medical verisimilitude—will be discussed.

Journal writing can be an effective way of documenting what a scientist encounters in clinical detail. Other ways of tracking forensic cases include spreadsheets and medical databases. In some offices, it is not uncommon to collect newspaper clippings of the deaths that are investigated and picked up by the media and place them in the case file. However, newspaper accounts may not be accurate; this presentation will provide examples of how eyewitness statements and assumptions made by the police or death investigators can be found to be in error when the body is taken to autopsy. Writing and documenting what a pathologist sees at the time of autopsy is crucial for clinical decision making and peer review, including review by outside experts. Furthermore, taking written notes about one's daily experiences and what one learns through those experiences can also become a psychological outlet: a way to "decompress" after a long day of working in extreme conditions, or a way to deal with the grief and anger of family members.[1,2] Writing can be a therapeutic exercise that supplements formal training in forensic pathology and should be encouraged in forensic fellowship training.[3]

Working in an understaffed and underfunded environment can also put stress on the forensic team and may incubate intramural tension. Mass fatality response, along with a backlog of routine cases delayed by ancillary lab studies, can add to the pressures pathologists experience. Journaling can help forensic professionals deal with the stresses of the job, but non-disclosure agreements and privacy policies may restrict professional communication and publication in a public forum. In academic writing, de-identification is used when sharing case reports, and this method can be used in writing non-fiction for public consumption. Fictionalizing actual forensic cases can allow scientists a way to explore the work that they do and share their experiences, both with other professionals and with the lay public.

A case report will be presented of a petty thief who stole a laptop and was chased down and shot dead in public by the laptop's owner. This case involved a complex gunshot wound trajectory analysis and the collection of property as evidence. Forensic-noir mystery writers such as Kathy Reichs, Patricia Cornwell, Jon Jefferson, and William Bass, all of whom worked in various capacities in the forensic sciences professional discipline, provided the inspiration to explore ways to educate the public about real-world forensic science through the use of a fictional narrative voice.

Reference(s):

1. Susan Smith, Cay Anderson-Hanley, Adela Langrock, Bruce Compas. The effects of journaling for women with newly diagnosed breast cancer. Psycho-Oncology: Journal of the *Psychological, Social and Behavioral Dimensions of Cancer* 14 (12), 1075-1082, 2005.
2. Susan K Lutgendorf, Philip Ullrich. Cognitive processing, disclosure, and health: Psychological and physiological mechanisms. *American Psychological Association*, 2002.
3. Shannon L Arntfield, Kristen Slesar, Jennifer Dickson, Rita Charon. Narrative medicine as a means of training medical students toward residency competencies. *Patient Education and Counseling* 91 (3), 280-286, 2013.

Pre-Registration was required.

BS3 The Science Behind Traffic Accident Reconstruction With Real-World Crashes

Wednesday, February 19, 2020 **7:00 a.m. – 8:30 a.m.** **.75 CE Hour**

Kurt D. Weiss, MS*
Case Study Collision Science, LLC
Santa Barbara, CA

Darren Franck, MSME
Advanced Engineering Associates, Inc
Charleston, WV

Learning Overview: The goal of this presentation is to share with the forensic science community the data sources and detailed methodology used in traffic collision reconstruction.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating through real-world case studies the data used and methodologies applied to the reconstruction of traffic collisions.

An analysis of four real-world crashes will demonstrate the science behind traffic accident reconstruction. Reconstructing a crash is a multidisciplinary process. The reconstructionist gathers objective and subjective information, performs case-specific research, then applies the fundamental principles of physics to determine, for example, impact classifications, vehicle heading, impact configuration, impact (closing) speed, velocity change or Delta-V (DV), rollover distance, roll count, and roll rate. The reconstruction results are important input to the injury analysis and the assessment of injury patterns, risk, and prevention.

The primary information source is the Traffic Collision Report, which may provide: (1) objective party information (e.g., occupant and vehicle year, make, model, Vehicle Identification Number (VIN)); (2) objective site information (location and roadway, intersection, and Global Positioning System (GPS) details), scene diagrams with measurements of physical evidence (tire friction marks, fractured glass, roadway scrapes and gouges, scarred tree bark, fractured signs or light posts, disturbed dirt and/or vegetation), point of impact, and vehicle rest locations; (3) at-scene police photographs of site evidence and vehicle damage; and (4) subjective information (e.g., party statements, vehicle code violations, police collision summary and primary collision factor identifying party and cause).

Case-specific research may include: (1) at-scene witness photographs, which are often taken with cell phone cameras; these photographs are crucial absent police photographic documentation of site and vehicle evidence; (2) security videos that can help refine the analysis by providing objective evidence of vehicle movements prior to and after the crash; (3) aerial photography from online image archives that orient and supplement scene diagrams; (4) drive-through videos that provide a street view of the roadway and/or intersection; (5) site inspections that clarify roadways, controls, and obstacles; (6) subject vehicle inspections with crush profile measurements document property damage and reveal relative impact alignment or vehicle movement; (7) Airbag Control Module (ACM) data that quantifies pre-crash vehicle speeds and accelerations and driver actions (e.g., swerving, braking); (8) subjective information (e.g., witness statements and deposition testimony) that helps qualify collision events and estimates of vehicle speeds, distances, and movements. These sources may also provide prior useful site, vehicle, or occupant history; and (9) exemplar vehicle inspections, scaled vehicle drawings, specifications, and crash test data that may be used to determine the collision severity.

An analysis of four real-world crashes demonstrate the science behind traffic accident reconstruction. Case 1 involved a fatal collision; vehicle crush measurements quantified collision severity. Case 2 was a vehicle-motorcycle crash; a download of ACM yielded pre-crash data. Case 3 describes a wrong-way, intoxicated driver in a high-speed crash; the patrol car's on-board video quantified vehicle impact speeds. Case 4 was a vehicle-motorcycle crash; stationary security videos quantified vehicle impact speeds.

Pre-Registration was required.

BS4 A Tour of a Cannabis Extract Manufacturing Facility in Maine

Thursday, February 20, 2020 **7:00 a.m. – 8:30 a.m.** **.75 CE Hour**

Jennifer A. Paris, BS*
New Hampshire State Police Forensic Laboratory
Concord, NH

Anna K. Weaver, BS
New Hampshire Department of Safety
Concord, NH

Learning Overview: After attending this presentation, attendees will have a better understanding of the operation of a small state-licensed and inspected cannabis extract manufacturing facility.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by promoting an understanding of the processes used to concentrate cannabinoids, how products are diluted, prepared, and packaged in order to comply with the relevant laws and regulations, and may be helpful for attendees who are assisting in building a local or state jurisdiction's medical or recreational marijuana program.

The state of Maine enacted a medical marijuana law after a citizen-led ballot initiative passed in November 1999. Since that point in time, multiple amendments have been made to the statute following feedback from patients, caregivers, medical providers, and a specially developed task force. Although a 2016 law was passed to allow for the recreational use of marijuana, and a 2017 law was passed concerning taxation and other regulations surrounding recreational marijuana, the commercial sale of the plant and products made from it have not yet begun.

Today, Maine permits both growing and processing of marijuana by individuals holding a medical card (i.e., "patients"). In addition, patients and caregivers are allowed to use a third-party manufacturing facility to convert their harvested marijuana or hemp into concentrated forms. These facilities are registered, inspected, and licensed by the state of Maine. They are expected to adhere to strict procedures regarding site safety and security, the quantity and type of plants on site, the quantity of harvested product on site, the use of "inherently hazardous substances," and the disposal of waste materials, among other standards.

This presentation will briefly cover the regulations in place for Maine's program, then focus on the specifics with respect to a small, registered manufacturing facility. Chemists from the New Hampshire State Police Forensic Laboratory were given the opportunity to tour one such facility in the summer of 2019 while extractions were in progress. This cannabis extract manufacturing facility employs supercritical carbon dioxide processing of harvested marijuana and/or flowering hemp grown by patients or their caregivers to produce highly purified concentrates devoid of terpenes. In addition, the facility was equipped with a closed-loop extraction system to produce butane honey oil, shatter, and "diamonds." Discussions regarding purity, concentration, cannabinoid profiles, and all aspects of the operation, including the evolution of the facility's practices over time, took place with the owner/operator of the facility. Attendees will be informed regarding the outdoor grow area, extraction and purification processes, preparation of food products, and product packaging materials at the visited facility.

Given the increased number of states where cannabis products are legal for medical or recreational use, it is important for those involved in the analysis of seized drugs to have an understanding of the processes used to concentrate cannabinoids from harvested marijuana and flowering hemp.

Pre-Registration was required.

BS5 Practical Aspects of Developing and Incorporating a Postmortem Computed Tomography (PMCT) Service Into a Medical Examiner's Office

Friday, February 21, 2020 **7:00 a.m. – 8:30 a.m.** **.75 CE Hour**

Lauren Edelman, MD*
Travis County Medical Examiner
Austin, TX

Keith Pinckard, MD, PhD
Travis County Medical Examiner
Austin, TX

Learning Overview: After attending this presentation, attendees will understand the concepts and considerations involved in incorporating PMCT into the practice of a medium-sized, regional medical examiner's office, including staffing, scanning protocols, triage of cases, study interpretation, and novel and alternative data storage solutions. Developing and incorporating a PMCT service is a complex project, with broad implications for many aspects of an individual office.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a framework and blueprint that can be used to incorporate and implement this burgeoning technology within the scope of death investigation for medical examiner's and coroner's offices.

The services of a consultant were engaged as part of the budget request associated with purchasing the Computed Tomography (CT) scanner. The consultant provided guidance for technical and structural considerations critical for drafting the purchasing bid documents and review of the bids for the purchase of the CT scanner and associated equipment. After installation by the vendor, the consultant also provided the basic scanning protocols that are programmed into the scanner for ease of use and include protocols for standard adult, bariatric, pediatric, charred remains, skeletal remains, and decomposed remains. This is a key component, since standard protocols that are provided by CT scanner vendors are designed for clinically based studies on living patients.

As part of the purchasing contract, the forensic autopsy technicians, none of whom have formal radiology technology training, received in-person instruction in the practical aspects of operating the equipment. Performing the scans with the appropriate protocols requires minimal direct management by the forensic autopsy technicians. Once the protocols are in place and validated, scanning proved to be relatively simple and straightforward. Scanning is performed during routine working hours on a rolling basis as decedents are brought into the office; scans are completed prior to the processing and external examination of the body. All decedents that are physically capable of fitting into the CT scanner are imaged. The rationale for this is two-fold. First, scanning every decedent as a matter of routine may guide how the pathologist approaches the case. Second, scanning creates a permanent 3D radiographic record of the body that can be reviewed long after the body has been permanently altered by autopsy.

The scans are reviewed and interpreted by the forensic pathologists as a group during a morning conference prior to performing examinations and again individually when medical examiner reports are written. The medical examiners in the office received training in CT interpretation by two physicians with prior PMCT experience who were already on staff. The learning curve of CT interpretation is very steep; familiarity with visualizing cross-sectional anatomy in three dimensions simultaneously comes surprising quickly. Furthermore, because all decedents are scanned, each pathologist gets immediate feedback by comparing autopsy findings to what was observed on the scans—a practice that builds interpretive skills and confidence rapidly. Once the medical examiner staff is comfortable with reading CT scans, decisions can be made regarding which types of cases might be able to be supplanted by PMCT.

A novel cloud-based storage and image-viewing software solution was purchased rather than a traditional Picture Archiving and Communication System (PACS). It has virtually identical capabilities, including permanent long-term storage with system redundancy, at a fraction of the cost of a standard PACS solution. In the opinion of the regional medical examiner's office, PACS is a vastly more sophisticated and ultimately far more expensive solution than what is actually required for death investigation purposes. For offices affiliated with medical centers, it may be possible and cost-effective to "partner" and obtain a node on a hospital's PACS. However, offices without this benefit have struggled to devise a system tailored to the unique needs of death investigation without the associated burdensome cost of a PACS—a cost factor that may deter an office from obtaining PMCT capability altogether. It is thought that this regional medical examiner's office is the first office to pilot and utilize this type of storage and viewing solution.

As more death investigation offices around the country begin to integrate CT imaging as part of the physician's toolkit, it is critical to share operating procedures and innovative solutions to common problems to assist others in participating in this exciting advancement in the field of forensic pathology.

*Presenting Author

Pre-Registration was required.

BS6 Is a Soldier's Combat Stress a Reason to Commit Five Murders?

Friday, February 21, 2020 **7:00 a.m. – 8:30 a.m.** **.75 CE Hour**

T.L. Williams, MFS*
Fredericksburg, VA

Phillip M. Curran, MFS*
United States Army Criminal Investigation Command
Quantico, VA

Celia M. Gallo, MFS*
United States Army Criminal Investigation Command
Quantico, VA

Rick Malone, MD*
N5 Forensic Behavioral Science, LLC
Woodbridge, VA

Angel L. Miles, MA*
United States Army Criminal Investigation Command
Fayetteville, NC

Learning Overview: After attending this presentation, attendees will have a better understanding of locating, identifying, and collecting evidence and the documentation of the crime scene associated with a mass casualty investigation. Attendees will also be aware of the policies and procedures for conducting a crime scene investigation (timeliness, thoroughness, and timely reporting) and casualty liaison briefings provided to the primary and secondary next-of-kin. This presentation will also enable attendees to understand how the psychological evaluation of the subject may or may not have affected the outcome of the trial by court-martial and the results of the court-martial.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating that a mass casualty investigation must be conducted in a timely and thorough manner in order to provide the court with the best evidence for conviction. The psychological evaluation will assist in determining if the subject was mentally responsible, and, if so, whether he should receive life with or without parole or the death penalty.

SGT John M. Russell had been seen at the Combat Stress Center (CSC), Camp Liberty, Iraq, on three separate occasions and had a noon appointment on May 11, 2009. At approximately 1:41 p.m. on May 11, 2009, the United States Army Criminal Investigation Command (known as CID) was notified of the shooting of several personnel inside the CSC. The investigation revealed that at approximately 12:30 p.m. on May 11, 2009, SGT Russell entered the CSC and methodically shot and killed five United States service members (a Navy Commander and an Army Major, a Sergeant, and two Private First Classes). SGT Russell was also listed for the offense of attempted murder and aggravated assault when he fired at two soldiers and missed. The Navy Commander was the only victim known to SGT Russell. SGT Russell, who did not have a weapon, gained possession of his escort's weapon (an M16 rifle), ordered his escort from the vehicle, then drove back to the CSC where he opened fire on unarmed personnel. Due to the regulatory requirements, all soldiers were required to carry their assigned weapons at all times in the combat environment on most camps; the only exception was a medical facility. Soldiers entering the CSC were required to place their weapons in an arms room while being treated; therefore, all soldiers in the CSC were unarmed and vulnerable. SGT Russell was subsequently disarmed and placed under apprehension.

More than 28 CID special agents in Iraq were involved in processing the crime scene and interviews of the victims, witnesses, and subject. More CID special agents around the world were involved in the autopsies, background investigation of the subject, and developing information for the court-martial. The preliminary crime scene reconstruction took approximately one week (the crime scene was maintained for many years, until it had to be bulldozed). The special agents conducted bloodstain spatter analysis, ballistic reconstruction, and a plethora of other forensic analyses of the five separate areas where the victims were murdered.

SGT Russell was evaluated and it was determined he was not mentally competent to stand trial; SGT Russell was placed in a mental health facility where he was evaluated for approximately four years. During this time, he was seen by several mental health professionals, questioned to determine his mental status, and medicated until he was considered restored to competency and returned to military custody.

Pre-Registration was required.

BS6 Is a Soldier's Combat Stress a Reason to Commit Five Murders?

On May 15, 2012, prosecutors decided to seek the death penalty and SGT Russell's defense stated he would pursue an insanity defense. On May 18, 2012, I Corps, Joint Base Lewis-McChord (JBLM) released the General Court-Martial Convening Authority (GCMCA) findings. The GCMCA referred court-martial charges against SGT Russell to a General Court-Martial empowered to adjudge a capital sentence.

During the court-martial proceedings, the defense blamed the combat mental health professionals for SGT Russell's actions and indicated that they could have prevented this mass casualty. SGT Russell was subsequently found guilty and on May 16, 2013, an Army judge sentenced SGT Russell to life without the possibility of parole for the shooting death of two care providers, two patients, and an escort. The judge stated, "You are not a monster, but you have knowingly and deliberately done incredibly monstrous things."

Pre-Registration was required.

L1 The Disappearance and Murder of Sierra LaMar: A Multidisciplinary Case Study

Thursday

February 20, 2020 **12:00 p.m. – 1:30 p.m.** **1.0 CE Hour**

Melissa A. Dupée, MSFS*
Santa Clara County Crime Laboratory
San Jose, CA

Michelle L. Bell, BA*
San Jose, CA

Learning Overview: The goal of this presentation is to inform attendees of a complex homicide investigation that was heavily fueled by physical evidence examinations, including DNA, trace evidence, digital and video evidence, latent prints, and questioned documents.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by showcasing the ability for multiple forensic disciplines to work together to achieve the maximum potential of the evidence items submitted in a missing person case turned homicide.

Fifteen-year-old Sierra LaMar left her Morgan Hill, CA, home on March 16, 2012, but never made it to school. Her school bag, containing the clothes she'd been wearing the day she disappeared, and her discarded cell phone were found a short time later. Thus began an investigation that utilized multiple crime lab disciplines, culminating in a months-long 2017 trial that found Antolin Garcia Torres guilty of kidnap and murder, even though Sierra's body has never been found.

DNA was instrumental in identifying a suspect. Biological evidence found on Sierra's clothes matched to Garcia Torres in the Combined DNA Index System (CODIS), and a later search of his vehicle yielded additional evidence. The DNA testing for this case, much of which was developed in the first few days following Sierra's disappearance, utilized a plethora of DNA techniques and resulted in a variety of conclusions, each of which required a different type of statistical analysis, including mixtures, paternity testing, and Y-chromosomal Short Tandem Repeats (Y-STRs).

Trace evidence played a big part in this case. The trace evidence analyses required travel to assorted sites in Morgan Hill to collect comparison samples for testing. Examinations of Sierra's clothing and Garcia Torres' vehicle revealed various types of trace evidence, including hair, fibers, glass beads, soil, botanicals, and insect parts. Extensive examinations were performed on Sierra's cell phone, which had turned on and off several times following her disappearance. This prompted a visit to the Samsung® facility in South Korea by an investigator involved in the case.

Questioned documents examination was performed when a notebook of Sierra's was discovered at school, with notes written in it suggesting she was thinking of running away. Video evidence was paramount in this case. At the beginning of the investigation, video evidence from near the school bus stop and from the school bus itself was reviewed to see if Sierra had made it that far that morning. Later, video from the parking lot of the defendant's home and from his transactions at a bank were converted to a format that could be more easily viewed in court. In addition, video showed the defendant a few nights before Sierra's disappearance purchasing only a gallon of bleach and a turkey baster—a strange purchase for a 21-year-old male to be making by himself at night.

Prior to the abduction of Sierra, there were multiple attempted kidnappings in Morgan Hill. Investigators, interested to see if they could somehow link these attacks to Sierra's disappearance, requested that a Taser®, left at one of the scenes by the perpetrator, be processed for latent prints. A latent fingerprint was developed on the battery of the Taser® and was identified as Antolin Garcia Torres' print. Therefore, these attempted kidnappings became a part of the Sierra LaMar trial, showing that the defendant had a history of attacking women, and he was found guilty of these crimes as well. The work conducted by all these forensic disciplines in conjunction helped find a suspect, connected him to other crimes, and put to rest several defense theories. Antolin Garcia Torres was sentenced to life in prison without the possibility of parole.

Pre-Registration was required.

L2 Fingerprinting the Brain: Mind, Memories, and Malingering

Friday

February 21, 2020 **12:00 p.m. – 1:30 p.m.** **1.0 CE Hour**

Charles Scott*
University of California, Davis School of Medicine
Sacramento, CA

Jorien Campbell, MD*
University of California, Davis Medical Center
Sacramento, CA

Gary Ciuffetelli, MD*
University of California, Davis Medical Center
Sacramento, CA

Ambarin Faizi, DO*
University of California, Davis Medical Center
Sacramento, CA

Bethany Hughes*
University of California, Davis Medical Center
Sacramento, CA

Learning Overview: After attending this presentation, attendees will better understand the role of brain fingerprinting to detect concealed information in forensic criminal cases.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by informing the competence of attendees through increasing the ability to interpret an emerging scientific method used to detect concealed information stored in the brain via the use of Electroencephalographic (EEG) brain responses/brainwaves.

Between 10% and 70% of criminal defendants claim crime-related amnesia; there is limited published literature on objective assessments of memory loss in a criminal setting. Interview techniques combined with psychological testing have been developed to assess possible malingering of memory loss. Investigators have long sought a reliable means of detecting deception. The Guilty Knowledge Test (GKT) is an early predecessor to brain fingerprinting and measures the individual's autonomic response to information known or not known about a crime.[1]

Recently, brain fingerprinting techniques using brain wave response have emerged as a scientific method to detect potentially concealed information stored in the brain. Brain fingerprinting techniques measure EEG brain responses/brainwaves and compute a determination of "information present" (the subject knows the critical information) or "information absent" (the subject does not).[1] According to this theory, if the individual is familiar with the information presented, a P300 brain wave is emitted and measured by an EEG.[2]

Farwell reports that in more than 200 test cases, brain fingerprinting yielded a 100% accuracy rate with a 0% error rate in distinguishing those who possessed specific target knowledge from those who did not.[1] As an example, in an experiment on 17 Federal Bureau of Investigation (FBI) agents, analysis using this P-300 brain fingerprinting technique yielded a 100% identification rate of FBI agents with FBI-relevant knowledge.[1] Dr. Farwell has coined the term "Farwell Brain Fingerprinting" (FBF) that he proposes has the ability to detect concealed information.[1]

The application of this FBF technique to forensic criminal cases was highlighted in the 2003 case of *Harrington v. State*. Terry Harrington sought to overturn his 1978 murder conviction on several grounds, including new evidence in the form of FBF that was not available at his original trial. Dr. Farwell administered his test to Mr. Harrington and rendered a report to the Iowa District Court analyzing Mr. Harrington's responses to information about the crime. Dr. Farwell asserted that his analyses supported Mr. Harrington's assertion that he was not guilty and, therefore, it should be allowed into evidence to help overturn his conviction. In contrast, the district attorney challenged these results, noting several factors that could have impacted the FBF outcome. The panel will review how the admissibility of this newly emerging FBF technique was addressed by the district and appellate courts and its impact, if any, on the legal outcome of Mr. Harrington.[3] The strengths and limitations of this approach will be discussed and admissibility under the *Daubert* standard will be highlighted.

Reference(s):

1. Farwall L.A. Brain fingerprinting: a comprehensive tutorial review of detection of concealed information with event-related brain potentials. *Cogn Neurodyn* 6:115-154, 2012.
2. Farwall L.A., Richardson D.C.; Richardson G.M. Brain fingerprinting field studies comparing P300-MERMER and P300 brain wave responses in the detection of concealed information. *Cogn Neurdyn* 7:263-299.
3. Farwell L.A., Makeig T.H. Farwell brain fingerprinting in the case of *Harrington v. State. Indiana State Bar Assoc.*, Open Court X [10]:3, 7-10, 2005.

Pre-Registration was required.

W1 Drug Delivery Homicide: Prosecution, Defense, and Expert Testimony

Monday

February 17, 2020 **8:30 a.m. – 12:00 p.m.** **3.0 CE Hours**

Learning Overview: The goals of this presentation are to: (1) discuss the theories of prosecution and defense under "drug-delivery-resulting-in-death" statutes and sentencing; (2) describe and explain the nuances of the Supreme Court of the United States (SCOTUS) decision in *Burrage v. United States*; (3) analyze the strengths and weaknesses of fact patterns drug-delivery-resulting-in-death cases; (4) identify and articulate the limitations of toxicological and medical testimony in these cases; and (5) prepare for testimony and direct and cross-examination in drug-delivery-resulting-in-death cases.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing background on the legal challenges for charging, defending, or providing opinions and testimony in cases in which an individual's death is alleged to have resulted from another individual's actions in supplying the drugs that caused the death. Prosecutors, defense attorneys, and testifying experts will be better prepared to provide scientifically supported evidence in the appropriate context to triers of fact in these cases.

Chair:
Barry K. Logan, PhD
NMS Labs, Inc
Willow Grove, PA

Co-Chair:
M.J. Menendez, JD
NMS Labs, Inc
Horsham, PA

Faculty:
Gregory G. Davis, MD
Jefferson County Medical Examiner's Office
Birmingham, AL

Christopher Young, JD
Dallas County Public Defenders Office
Dallas, TX

Michael J. Hunter, JD
Department of Justice
Organized Crime Drug Enforcement Task Force
Columbus, OH

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

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 60 pages

Supported By: The Center for Forensic Science Research & Education at the Fredric Rieders Family Foundation

Pre-Registration was required.

W1 Drug Delivery Homicide: Prosecution, Defense, and Expert Testimony

Program Description: This program will evaluate from the jurisprudence, pathology, and toxicology perspectives the legal theories and testimony required to prosecute or defend cases involving allegations that one individual's actions caused the death of another person by supplying them with a drug, either licit or illicit. There is a growing trend toward prosecution of these cases, and this workshop is intended to prepare all the professionals involved in these cases.

Program:

8:30 a.m.	-	8:35 a.m.	**Welcoming Remarks** *Barry K. Logan, PhD*
8:35 a.m.	-	9:05 a.m.	**State and Federal Statutes and Case Law on Drug Delivery Resulting in Death** *M.J. Menendez, JD*
9:05 a.m.	-	9:40 a.m.	**The Prosecution Perspective on Charging and Presenting Drug Delivery Resulting in Death** *Michael J. Hunter, JD*
9:40 a.m.	-	10:15 a.m.	**The Defense Perspective on Defending Drug Delivery Resulting in Death** *Christopher Young, JD*
10:15 a.m.	-	10:40 a.m.	**Break**
10:40 a.m.	-	11:15 a.m.	**A Forensic Pathologist Perspective on Determination of the Role of Specific Drugs in Complex Drug Toxicity Cases** *Gregory G. Davis, MD*
11:15 a.m.	-	11:50 a.m.	**Toxicological Considerations in Determining the Role of Specific Drugs in Complex Drug Toxicity Cases** *Barry K. Logan, PhD*
11:50 a.m.	-	12:00 p.m.	**Panel Discussion** *M.J. Menendez, JD; Gregory G. Davis, MD; Michael J. Hunter, JD; Barry K. Logan, PhD; Christopher Young, JD*

Pre-Registration was required.

W2 Statistical Learning Algorithms for Forensic Scientists

Monday

February 17, 2020 **8:30 a.m. – 12:15 p.m.** **3.25 CE Hours**

Learning Overview: The goals of this workshop are to: (1) introduce attendees to the basics of supervised learning algorithms in the context of forensic applications, including firearms and footwear examination and trace evidence, while placing emphasis on classification trees, random forests, and, time permitting, neural networks; (2) introduce the concept of a similarity score to quantify the similarity between two items; (3) show how learning algorithms can be trained to classify objects into pre-determined classes; (4) discuss limitations of Machine Learning (ML) algorithms and introduce methods for assessing their performance; and (5) discuss the concept of a Score-based Likelihood Ratio (SLR): computation, advantages, and limitations.

Impact on the Forensic Science Community: The use of learning algorithms will increase as measurement of features in various types of evidence improve. This is particularly true in the case of pattern evidence. Forensic scientists will greatly benefit from understanding the basic ideas that underpin statistical learning since these types of methods have already been proposed for firearms examination, fingerprints, glass comparison, and shoe print evidence. Most quantitative training for forensic scientists emphasize classical statistical ideas, so a workshop in which forensic practitioners are exposed to learning algorithms is novel and timely.

Chair:
Michael J. Salyards, PhD
Compass Scientific Consulting LLC
Sharpsburg, GA

Co-Chair:
Robert M. Thompson, MFS
National Institute of Standards and Technology
Gaithersburg, MD

Faculty:
Alicia L. Carriquiry, PhD
Center for Statistics and Applications in Forensic Evidence
Iowa State University
Ames, IA

Heike Hofmann, PhD
Center for Statistics and Applications in Forensic Evidence
Iowa State University
Ames, IA

Targeted Audience: Criminalistics, Engineering & Applied Sciences, General, Questioned Documents

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 40 pages

Pre-Registration was required.

W2 Statistical Learning Algorithms for Forensic Scientists

Program Description: Learning algorithms is becoming a useful tool to evaluate and interpret evidence. This workshop will discuss some of the more popular types of algorithms and their application in different forensic disciplines and explain some of their limitations.

Program:

8:30 a.m.	-	8:45 a.m.	**Welcome and Introductions** *Alicia L. Carriquiry, PhD*
8:45 a.m.	-	9:15 a.m.	**Evaluation of Evidence: Reliability, Repeatability, Objectivity** *Michael J. Salyards, PhD*
9:15 a.m.	-	9:45 a.m.	**Learning Algorithms for Classification: A Gentle Introduction** *Alicia L. Carriquiry, PhD*
9:45 a.m.	-	10:15 a.m.	**Random Forests: How They Work, Their Nice Attributes, Some Limitations** *Heike Hofmann, PhD*
10:15 a.m.	-	10:30 a.m.	**Break**
10:30 a.m.	-	11:00 a.m.	**Same Gun or Different Gun? Quantifying the Similarity Between Bullet Striations** *Heike Hofmann, PhD*
11:00 a.m.	-	11:30 a.m.	**Learning Algorithms to Compare Footwear Impressions** *Alicia L. Carriquiry, PhD*
11:30 a.m.	-	11:45 a.m.	**Score-Based Likelihood Ratios: The Good, the Bad, and the Ugly** *Alicia L. Carriquiry, PhD*
11:45 a.m.	-	12:15 p.m.	**Final Thoughts and Closing Discussion** *Michael J. Salyards, PhD*

Pre-Registration was required.

W3 Recent Advances in Understanding Fire Pattern Production

Monday

February 17, 2020 **8:30 a.m. – 12:15 p.m.** **3.5 CE Hours**

Learning Overview: After attending this workshop, attendees will have an appreciation not only for the difficulty in determining the origin of a fully involved fire, but also some of the solutions to the problem resulting from recent full-scale fire experiments performed at Underwriters Laboratories (UL). The outcome of the research emphasizes the point that "If you don't understand the ventilation, you won't understand the fire."

Impact on the Forensic Science Community: This workshop will impact the forensic science community by providing investigators with the tools they need to understand and correctly interpret fire patterns and use that interpretation to find the fire's origin. In the past decade, the validity of fire origin determination has been called into question because sometimes investigators have been misled by ventilation-generated patterns.

Chair:
John J. Lentini, BA
Scientific Fire Analysis, LLC
Islamorada, FL

Co-Chair:
Douglas J. Carpenter, MS
Combustion Science & Engineering, Inc
Columbia, MD

Faculty:
Daniel Madrzykowski, PhD
Underwriters Laboratories Firefighter Safety Research Institute
Columbia, MD

Targeted Audience: Criminalistics, Engineering & Applied Sciences, General

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 40 pages

Program Description: Presenters will discuss the results of two years of full-scale fire tests on two full-sized test structures conducted at UL. The results will help investigators avoid mistakes that have been documented in the past decade and arrive at the correct interpretation of post-fire artifacts. Attendees will learn how to access a freely available interactive web portal so as to allow experimental results to be compared with real-world fires.

Program:

8:30 a.m.	-	9:00 a.m.	**Introduction** *John J. Lentini, BA*
9:00 a.m.	-	10:00 a.m.	**Fire Dynamics and Fire Data Needed to Conduct a Fire Analysis** *Daniel Madrzykowski, PhD*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	11:15 a.m.	**Relating Fundamental Principles to Fire Pattern Interpretation** *Douglas J. Carpenter, MS*
11:15 a.m.	-	12:15 p.m.	**Panel Discussion** *John J. Lentini, BA; Douglas J. Carpenter, MS; Daniel Madrzykowski, PhD*

Pre-Registration was required.

W4 The Impact of the 2018 Farm Bill on the Forensic Analysis of Cannabis

Monday

February 17, 2020 **8:30 a.m. – 12:30 p.m.** **3.5 CE Hours**

Learning Overview: After attending this presentation, attendees will understand the legal and forensic landscape of marihuana/hemp analysis and also understand a validated analytical approach that meets these new requirements.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a framework for meeting the forensic requirements of the 2018 Farm Bill.

Chair:
Richard P. Meyers, MSFS
Drug Enforcement Administration
Office of Forensic Sciences
Springfield, VA

Co-Chair:
Sandra E. Rodriguez-Cruz, PhD
Drug Enforcement Administration
Special Testing and Research Laboratory
Dulles, VA

Faculty:
Linda C. Jackson, MS
Department of Forensic Science
Richmond, VA

Shawn K. West, MSFS
Colorado Bureau of Investigation
Pueblo, CO

Targeted Audience: Criminalistics, General, Jurisprudence
Knowledge Level Required: Intermediate (some knowledge of subject presented)
Expected Handout Length: 200 pages

Program Description: This workshop will provide an overview of changes in the law, describe an analytical approach to providing reliable results that conform to the new legal requirements, and provide an overview of the work done to validate the methods incorporated into the analytical approach. State laboratory managers will describe their varying approaches to meeting these new challenges from a state that had legalized marijuana prior to changes in federal law and a state that had not.

Program:

8:30 a.m.	-	8:40 a.m.	**An Overview of the Changes to Federal Drug Law** *Richard P. Meyers, MSFS*
8:40 a.m.	-	9:00 a.m.	**The Effects on Analytical Procedures—The Virginia Experience** *Linda C. Jackson, MS*
9:00 a.m.	-	9:20 a.m.	**The Effects on Analytical Procedures—The Colorado Experience** *Shawn K. West, MSFS*
9:20 a.m.	-	9:35 a.m.	**Break**
9:35 a.m.	-	11:00 a.m.	**The Development of New Analytical Protocol** *Sandra E. Rodriguez-Cruz, PhD*
11:00 a.m.	-	11:45 a.m.	**Collaboration in Developing New Analytical Protocol** *Linda C. Jackson, MS*
11:45 a.m.	-	12:30 p.m.	**Panel Discussion** *Sandra E. Rodriguez-Cruz, PhD; Linda C. Jackson, MS; Shawn K. West, MSFS; Richard P. Meyers, MSFS*

Pre-Registration was required.

W5 The Psychopathology of Homicide

Monday

February 17, 2020 **8:30 a.m. – 12:30 p.m.** **3.5 CE Hours**

Learning Overview: After attending this presentation, attendees will better understand the relationship between psychopathology and the phenomenon of homicide.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by demonstrating how the identification of the features of psychopathology of homicide can inform treatment planning.

Chair:
Alan R. Felthous, MD
Saint Louis University School of Medicine
St. Louis, MO

Co-Chair:
Felice F. Carabellese, MD
University of Bari, Section of Forensic Psychiatry
Bari, ITALY

Faculty:
Carlo P. Campobasso, MD, PhD
University of Campania
Department of Experimental Medicine
Napoli, ITALY

Giancarlo Di Vella, MD, PhD
University of Torino
Department of Public Health Sciences
Torino, ITALY

Gabriele Mandarelli, MD, PhD
University of Rome "Sapienza"
Rome, ITALY

Ilaria Rossetto, PhD
Residences for Execution Safety Measures
Castiglione delle Stiviere, ITALY

Silvia Trotta
Institute of Legal Medicine
Bari, ITALY

Targeted Audience: Criminalistics, Pathology/Biology, Psychiatry & Behavioral Science

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 300 pages

Pre-Registration was required.

W5 The Psychopathology of Homicide

Program Description: The workshop speakers will debate from different points of view the psychopathology of men and women who kill; the psychopathology of men and women of criminal organizations, such as the Sicilian mafia; combined homicide suicide; the Not Guilty by Reason of Insanity (NGRI) killers: a national sample; forensic psychiatric evaluations of defendants in homicide cases: literature analysis and forensic cases; and treatment outcomes following a killing conviction. Several general pathologists will speak on topics that pertain to the killer's mental state from the perspective of forensic pathology and the investigation of homicide. The criminological and psychiatric data from a multicenter national Italian sample of forensic psychiatric patients will be also discussed.

Program:

8:30 a.m.	-	9:00 a.m.	**The Underpinnings of Combined Homicide-Suicide** *Alan R. Felthous, MD*
9:00 a.m.	-	9:30 a.m.	**The Psychopathology of Men and Women Who Kill** *Felice F. Carabellese, MD*
9:30 a.m.	-	10:00 a.m.	**The Killer's Mental State From the Perspective of Forensic Pathology** *Giancarlo Di Vella, MD, PhD*
10:00 a.m.	-	10:30 a.m.	**The Role of the Forensic Pathologist in Serial Homicides** *Carlo P. Campobasso, MD, PhD*
10:30 a.m.	-	11:00 a.m.	**Break**
11:00 a.m.	-	11:30 a.m.	**Treatment Outcomes Following Conviction for Homicide** *Ilaria Rossetto, PhD*
11:30 a.m.	-	12:00 p.m.	**Investigation of Homicide** *Silvia Trotta*
12:00 p.m.	-	12:30 p.m.	**Forensic Psychiatric Evaluation of Defendants in Homicide Cases: A Literature Review and Analysis of Preliminary Data From a Multicenter Italian Study** *Gabriele Mandarelli, MD, PhD*

Pre-Registration was required.

W6 High-Impact Practices in Forensic Science Education

Monday

February 17, 2020 **8:30 a.m. – 4:15 p.m.** **6.25 CE Hours**

Learning Overview: After attending this presentation, attendees will learn how high-impact practices can be used in forensic science education and discover how to adapt their courses using common programing for students by: (1) identifying and describing a variety of high-impact practices; (2) recognizing useful high-impact practices dependent on the environment; and (3) discovering innovative high-impact practices that could be incorporated into their classroom.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by exploring a variety of high-impact practices and gaining insight into a broader scope of common methods useful in forensic science teaching. By discussing multiple types of high-impact practice techniques and the application of these practices in forensic science education, attendees will be able to incorporate tools into their forensic science classrooms and programs.

Chair:
Gina Londino-Smolar, MS
Indiana University–Purdue University Indianapolis
Indianapolis, IN

Faculty:
Dwight E. Adams, PhD
University of Central Oklahoma
Forensic Science Institute
Edmond, OK

Dean J. Bertram, PhD
The University of Southern Mississippi
School of Criminal Justice for Science & Security
Hattiesburg, MS

Amy N. Brodeur, MFS
Boston University School of Medicine
Biomedical Forensic Sciences
Boston, MA

Mark R. McCoy, EdD
University of Central Oklahoma
Forensic Science Institute
Edmond, OK

Carraugh Reilly Nowak, MFS
Hilbert College
Hamburg, NY

Co-Chair:
Karen S. Scott, PhD
Arcadia University
Glenside, PA

Uzoma A. Okafor, PhD
Albany State University
Chemistry & Forensic Science
Albany, GA

Caitlin E. Porterfield, MS
University of Central Oklahoma
Forensic Science Institute
Edmond, OK

Douglas A. Ridolfi, MS
Buffalo State College
Chemistry Department
Buffalo, NY

Joseph Levi White, MS
Defense Forensic Science Center
Digital Evidence-CFI
Forest Park, GA

Targeted Audience: All disciplines

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 100 pages

Pre-Registration was required.

W6 High-Impact Practices in Forensic Science Education

Program Description: A variety of high-impact practice methods currently in use in various forensic science education programs will be shared. These methods will include first-year experiences, living-learning communities, field trips, community-focused projects, casework and scholarly research, project-based learning courses, and the student transformative learning record. Each discussion will include real-life examples of how the high-impact practice method is implemented within the curriculum or program. Due to the requirement of these types of high-impact practices for Forensic Science Education Programs Accreditation Commission (FEPAC) accreditation, there will be a discussion of the importance of these practices within forensic science education and how the standards can be achieved in multiples ways. Attendees will learn how to apply these methods toward any discipline or program.

Program:

8:30 a.m.	-	8:45 a.m.	**Welcome and Introduction to the Council of Forensic Science Educators (COFSE)** *Gina Londino-Smolar, MS*
8:45 a.m.	-	9:15 a.m.	**FEPAC—The Importance of High-Impact Practices in Forensic Science Education** *Dwight E. Adams, PhD*
9:15 a.m.	-	10:00 a.m.	**First-Year Experience** *Uzoma A. Okafor, PhD*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	11:00 a.m.	**Living Learning Communities—Bridging the Student Engagement Gap** *Caitlin E. Porterfield, MS*
11:00 a.m.	-	11:45 a.m.	**Community-Focused Case Practicum** *Amy N. Brodeur, MFS*
11:45 a.m.	-	12:30 p.m.	**Success and Support for Students, Administration, and Accreditation Bodies—Field Trips in Forensic Science** *Joseph Levi White, MS; Dean J. Bertram, PhD*
12:30 p.m.	-	1:30 p.m.	**Lunch**
1:30 p.m.	-	2:15 p.m.	**Casework and Scholarly Research in Forensic Education** *Carraugh Reilly Nowak, MFS*
2:15 p.m.	-	3:00 p.m.	**Encouraging Creativity in Project-Based Learning Assignments** *Douglas A. Ridolfi, MS*
3:00 p.m.	-	3:15 p.m.	**Break**
3:15 p.m.	-	4:00 p.m.	**Capturing Beyond Discipline Knowledge With the Student Transformative Learning Record** *Mark R. McCoy, EdD*
4:00 p.m.	-	4:15 p.m.	**Closing Remarks** *Karen S. Scott, PhD*

Pre-Registration was required.

W7 New Advances in Forensic Human Identification: Issues and Approaches

Monday

February 17, 2020 **8:30 a.m. – 4:45 p.m.** **6.75 CE Hours**

Learning Overview: After attending this presentation, attendees will have a heightened understanding of: (1) the factors affecting human identification; and (2) how the application of new, innovative, and cross-disciplinary techniques have the potential to overcome these issues, which will be detailed through case examples.

Impact on the Forensic Science Community: This presentation will impact the forensic science community through the presentation of multidisciplinary approaches toward human identification, pointing out the novel techniques suitable for this purpose, encouraging collaboration and innovation among different forensic specialties to document and to integrate several lines of evidence.

Chair:
Sara C. Zapico, PhD
Florida International University
International Forensic Research Institute
Miami, FL

Co-Chair:
Sarah Ellingham, PhD
International Committee of the Red Cross
IRAQ

Faculty:
Joe Adserias-Garriga, DDS, PhD
Texas State University
Forensic Anthropology Department
San Marcos, TX

Josep De Alcaraz-Fossoul, PhD
University of New Haven
College of Criminal Justice & Forensic Sciences
West Haven, CT

Leslie E. Fitzpatrick, PhD
Mercyhurst University
Department of Applied Forensic Sciences
Erie, PA

Alexander S. Forrest, FFOMP
Queensland Forensic and Scientific Services
Forensic Pathology Department
Coopers Plain, Queensland, AUSTRALIA

Douglas H. Ubelaker, PhD
Smithsonian Institution
Department of Anthropology
Washington, DC

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

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 50 pages

Pre-Registration was required.

W7 New Advances in Forensic Human Identification: Issues and Approaches

Program Description: This workshop will demonstrate how awareness of the problems faced with human identification, thinking outside the box, and applying and integrating new techniques with traditional procedures are essential to facilitate the correct identification of the victims.

Program:

8:30 a.m.	-	8:45 a.m.	**Introduction** *Sara C. Zapico, PhD; Sarah Ellingham, PhD; Joe Adserias-Garriga, DDS, PhD; Douglas H. Ubelaker, PhD; Josep De Alcaraz-Fossoul, PhD; Leslie E. Fitzpatrick, PhD; Alexander S. Forrest, FFOMP*
8:45 a.m.	-	9:45 a.m.	**Identification Issues in Forensic Anthropology: A Case Discussion** *Douglas H. Ubelaker, PhD*
9:45 a.m.	-	10:30 a.m.	**Forensic DNA Phenotyping** *Sara C. Zapico, PhD*
10:30 a.m.	-	10:45 a.m.	**Break**
10:45 a.m.	-	11:30 a.m.	**Postmortem Interval (PMI) Estimation Throughout Thanatomicrobiome Analysis** *Joe Adserias-Garriga, DDS, PhD*
11:30 a.m.	-	12:15 p.m.	**The Aging of Fingerprints** *Josep De Alcaraz-Fossoul, PhD*
12:15 p.m.	-	1:15 p.m.	**Lunch**
1:15 p.m.	-	2:00 p.m.	**Stable Isotope Fundamentals** *Leslie E. Fitzpatrick, PhD*
2:00 p.m.	-	2:45 p.m.	**Forensic Radiocarbon Analysis** *Douglas H. Ubelaker, PhD*
2:45 p.m.	-	3:00 p.m.	**Break**
3:00 p.m.	-	3:45 p.m.	**Presenting a Positive Image** *Alexander S. Forrest, FFOMP*
3:45 p.m.	-	4:30 p.m.	**The Documentation and Disposition of Unidentified Human Remains** *Sarah Ellingham, PhD*
4:30 p.m.	-	4:45 p.m.	**Questions & Closing Remarks** *Sara C. Zapico, PhD; Sarah Ellingham, PhD; Joe Adserias-Garriga, DDS, PhD; Douglas H. Ubelaker, PhD; Josep De Alcaraz-Fossoul, PhD; Leslie E. Fitzpatrick, PhD; Alexander S. Forrest, FFOMP*

Pre-Registration was required.

W8 Death Investigations in the Military: Case Studies From Around the World

Monday

February 17, 2020 **8:30 a.m. – 5:00 p.m.** **6.75 CE Hours**

Learning Overview: After attending this presentation, attendees will understand: (1) processing a variety of death scenes; (2) forensic capabilities of military investigators; (3) investigative considerations in foreign countries; (4) coordination with international agencies; (5) domestic violence impact on child death; (6) staged suicide; (7) scene reconstruction; and (8) laboratory capabilities.

Impact on the Forensic Science Community: This presentation will impact the forensic science community through detailed accounts of a variety of death investigations as described by Army Special Agents who participated in the cases. The investigations represent various circumstances and illustrate the worldwide capabilities and responsibilities of military investigative agencies, along with legal and laboratory support.

Chair:
Steven Geniuk, MS
United States Army Military Police School
Forensic Science Training Facility
Fort Leonard Wood, MO

Co-Chair:
Precious JeanBatiste, MS
United States Army Criminal Investigation Command
Fort Meade, MD

Faculty:
Joshua L. Adams, PhD
United States Army Criminal Investigation Command
Fort Myer, VA

Adam C. Armstrong, MS
United States Army Criminal Investigation Command
Fort Bragg, NC

Sarah N. Crosby, MS
United States Army Criminal Investigation Command
Arlington, VA

Armando B. Dela Rosa, Jr., MA
United States Army Criminal Investigation Command
Quantico, VA

John W. Dunlap, MSFS, MSCJ
U.S. Army Criminal Investigation Division
Joint Base Lewis-McChord, WA

Derek J. Kingsbury, MBA
United States Army Criminal Investigation Command
Joint Base Lewis-McChord, WA

Keith M. McCullen, MFS
Black River, NY

Vanessa R. Neff, MS
United States Army Criminal Investigation Command
Fort Hood, TX

Edmund D. Tamburini, MFS
McDonough, GA

Targeted Audience: Criminalistics, General, Jurisprudence, Pathology/Biology, Psychiatry & Behavioral Science

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 120 pages

Pre-Registration was required.

W8 Death Investigations in the Military: Case Studies From Around the World

Program Description: Investigators from the United States Army Criminal Investigation Division specializing in forensic science will present seven case studies illustrating a wide variety of death investigations spanning the globe. Additionally, a representative from the Army's Judge Advocate General (JAG) Corps will provide an overview of the military criminal justice system. The United States military crime lab representatives will share their expeditionary capabilities in support of Department Of Defense investigations worldwide.

Program:

8:30 a.m.	-	8:40 a.m.	**Introduction** *Steven Geniuk, MS*
8:40 a.m.	-	9:50 a.m.	**An Overview of Military Death Investigations** *Armando B. Dela Rosa, Jr., MA; John W. Dunlap, MSFS, MSCJ*
9:50 a.m.	-	10:05 a.m.	**Break**
10:05 a.m.	-	11:05 a.m.	**DNA Finds a Missing Soldier** *Derek J. Kingsbury, MBA*
11:05 a.m.	-	12:05 a.m.	**Strangulation and a Sunken Car** *Vanessa R. Neff, MS*
12:05 a.m.	-	1:20 p.m.	**Lunch**
1:20 p.m.	-	2:10 p.m.	**A Nine-Shot Suicide** *Joshua L. Adams, PhD; Sarah N. Crosby, MS*
2:10 p.m.	-	3:00 p.m.	**Double Homicide by Stalker** *Adam C. Armstrong, MS*
3:00 p.m.	-	3:15 p.m.	**Break**
3:15 p.m.	-	4:00 p.m.	**Saved by a Smart Book** *Keith M. McCullen, MFS*
4:00 p.m.	-	4:40 p.m.	**The United States Army Criminal Investigation Laboratory (USACIL) in Death Cases** *Steven Geniuk, MS*
4:40 p.m.	-	5:00 p.m.	**Wrap-Up and Questions** *Steven Geniuk, MS*

Pre-Registration was required.

W9 Interpersonal Violence and Elder Abuse: Maltreatment That Crosses All Borders

Monday

February 17, 2020 **8:30 a.m. – 5:00 p.m.** **7.0 CE Hours**

Learning Overview: After attending this presentation, attendees will be able to identify multiple forms of abuse and mistreatment, recognize the impact of abuse across the lifespan, and specify key points for the prosecution of abusers.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by broadening the education of those working with victims of violence. This presentation will enhance not only the ability to intervene in maltreatment but to prosecute the abuser.

Chair:
Amy Y. Carney, PhD
California State University San Marcos
San Marcos, CA

Co-Chair:
Patricia M. Speck, DNSc
Hoover, AL

Faculty:
Rachell A. Ekroos, PhD
Center for Forensic Nursing Excellence International
Las Vegas, NV

Diana K. Faugno, MSN
Dallas, GA

Debra Holbrook, MSN
Academy of Forensic Nursing
Baltimore, MD

Stacey A. Mitchell, DNP
Texas A&M University
Bryan, TX

Kathleen S. Thimsen, DNP
Barnes Jewish College, Goldfarb School of Nursing
Saint Louis, MO

David A. Williams, DDS
Randallstown, MD

Joyce P. Williams, DNP
Randallstown, MD

Targeted Audience: General

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 50 pages

Pre-Registration was required.

W9 Interpersonal Violence and Elder Abuse: Maltreatment That Crosses All Borders

Program Description: This presentation will provide attendees the tools and information they need to identify and intervene in interpersonal violence and elder abuse in their communities. Maltreatment across the lifespan will be addressed, with clear and concise case studies and examples that attendees will be able to use to broaden their understanding of the impact of violence on all age groups. Topics include forensic markers of abuse, wound identification, documentation of abuse, working with victims of violence, and evidence collection that leads to successful arrest and prosecution of perpetrators of abuse.

Program:

8:30 a.m.	-	9:15 a.m.	**The Impact of Trauma on Health: Crossing the Boundaries** *Patricia M. Speck, DNSc*
9:15 a.m.	-	10:00 a.m.	**Strangulation in Interpersonal Violence and Elder Abuse** *Debra Holbrook, MSN*
10:00 a.m.	-	10:30 a.m.	**Age-Related Changes and Comorbidities: Differentiating Abuse** *Kathleen S. Thimsen, DNP*
10:30 a.m.	-	10:45 a.m.	**Break**
10:45 a.m.	-	11:30 a.m.	**Reaching Across Professional Borders: Creating Coordinated Community Response to Elder Abuse** *Rachell A. Ekroos, PhD*
11:30 a.m.	-	12:00 p.m.	**Panel Discussion** *Patricia M. Speck, DNSc; Debra Holbrook, MSN; Kathleen S. Thimsen, DNP; Rachell A. Ekroos, PhD*
12:00 p.m.	-	1:00 p.m.	**Lunch**
1:00 p.m.	-	1:45 p.m.	**Interpersonal Violence and Elder Abuse: Where's the Border?** *Amy Y. Carney, PhD*
1:45 p.m.	-	2:30 p.m.	**Investigating Abuse and Neglect in Health Care Facilities** *Stacey A. Mitchell, DNP*
2:30 p.m.	-	2:45 p.m.	**Break**
2:45 p.m.	-	3:30 p.m.	**Elder Sexual Abuse: A Case Review** *Diana K. Faugno, MSN*
3:30 p.m.	-	4:15 p.m.	**The Elderly in Disasters** *David A. Williams, DDS; Joyce P. Williams, DNP*
4:15 p.m.	-	4:45 p.m.	**Panel Discussion** *Amy Y. Carney, PhD; Stacey A. Mitchell, DNP; Diana K. Faugno, MSN; David A. Williams, DDS; Joyce P. Williams, DNP*
4:45 p.m.	-	5:00 p.m.	**Questions and Wrap-Up** *Patricia M. Speck, DNSc; Debra Holbrook, MSN; Kathleen S. Thimsen, DNP; Rachell A. Ekroos, PhD; Amy Y. Carney, PhD; Stacey A. Mitchell, DNP; Diana K. Faugno, MSN; David A. Williams, DDS; Joyce P. Williams, DNP*

Pre-Registration was required.

W10 The Investigation and Analysis of Health Care Serial Killers

Monday

February 17, 2020 **8:30 a.m. – 5:00 p.m.** **7.0 CE Hours**

Learning Overview: After attending this presentation, attendees will: (1) state the different motivations of health care serial killers; (2) understand some of the challenges associated with analytical testing and result interpretation; (3) list the agents that have been used in medical killings and describe their mechanism of action; and (4) understand how to best prepare for case presentation in a legal proceeding.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a multidisciplinary approach to understanding, identifying, and investigating health care serial killers.

Chair:
Laura M. Labay, PhD
NMS Labs, Inc
Willow Grove, PA

Co-Chair:
Donna M. Papsun, MS
NMS Labs, Inc
Willow Grove, PA

Faculty:
Michael M. Baden, MD
New York, NY

Tim Braun
National Center for Missing & Exploited Children
Alexandria, VA

Kevin M. Legg, PhD
Center for Forensic Science Research and Education
Willow Grove, PA

Steven M. Marcus, MD**
Montville, NJ

Vincent Marks, DM**
University of Surrey
Guilford, UNITED KINGDOM

Paul Uribe, MD
Armed Forces Medical Examiner System
Office of the Armed Forces Medical Examiner
Dover Air Force Base, DE

Beatrice Yorker, JD
Los Angeles, CA

***Pre-Recorded/Remote Presentation*

Targeted Audience: Jurisprudence; Psychiatry & Behavioral Science; Toxicology

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 100 pages

Supported By: NMS Labs, Inc

Pre-Registration was required.

W10 The Investigation and Analysis of Health Care Serial Killers

Program Description: The health care serial killer is a unique type of criminal offender who is employed as a medical provider and intentionally ends the life of a person under their care. The motivations to kill are varied, but include ending the suffering of a patient who unlikely will recover, minimizing the emotional toll of the relatives, achieving recognition from their colleagues by accomplishing life-saving resuscitation measures, and exerting dominance over a weaker individual.

These cases are challenging to recognize as they typically occur over an extended period of time, involve different care facilities, and include patients who are severely ill and/or have a terminal diagnosis. Toxicology testing may not include the administered substance or interpretation is confounded due to variables such as analyte instability and the poor health status of the patient. Instead, identification and investigations tend to occur when a correlation between a care provider's presence and a cluster of deaths is observed.

Program:

8:30 a.m.	-	8:40 a.m.	**Introduction and Historical Overview** *Laura M. Labay, PhD*
8:40 a.m.	-	9:35 a.m.	**Profiling the Medical Serial Killers—Motivations and Common Features** *Beatrice Yorker, JD*
9:35 a.m.	-	9:50 a.m.	**Break**
9:50 a.m.	-	10:45 a.m.	**Hospital Preventive Measures and Investigations** *(Pre-Recorded/Remote Presentation)* *Stephen M. Marcus, MD*
10:45 a.m.	-	11:40 a.m.	**Criminal Investigation of Medical Serial Killers** *Tim Braun*
11:40 a.m.	-	12:20 p.m.	**The Medical Examiner Perspective** *Michael M. Baden, MD*
12:20 p.m.	-	1:20 p.m.	**Lunch**
1:20 p.m.	-	2:15 p.m.	**Murder by Insulin** *(Pre-Recorded/Remote Presentation)* *Vincent Marks, DM*
2:15 p.m.	-	3:10 p.m.	**Analytical Proof** *Kevin M. Legg, PhD*
3:10 p.m.	-	3:25 p.m.	**Break**
3:25 p.m.	-	4:05 p.m.	**Application of the Differential Diagnosis Process** *Paul Uribe, MD*
4:05 p.m.	-	5:00 p.m.	**Meeting a Legal Burden of Proof** *Beatrice Yorker, JD*

Pre-Registration was required.

W11 The Native American Graves Protection and Repatriation Act (NAGPRA) and the Medicolegal System: Legal, Practical, and Ethical Considerations for Practitioners

Monday

February 17, 2020 **8:30 a.m. – 5:15 p.m.** **7.25 CE Hours**

Learning Overview: After attending this presentation, attendees will: (1) better understand NAGPRA and how it applies to Medical Examiner/Coroner (ME/C) offices that come into possession of non-forensic Native American remains; (2) learn the legal responsibilities necessary to be compliant with the federal law and understand when and how NAGPRA-compliant protocols should be followed; (3) learn how to complete each step of the NAGPRA process, including what types of evidence are used to determine cultural affiliation; and (4) learn best practices for communicating with tribes.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing attendees with an understanding of why and how the federal NAGPRA law applies to the medicolegal system when non-forensic Native American remains are submitted to ME/C offices and the possible repercussions for non-compliance. NAGPRA governs the treatment and disposition of Native American remains in any state office that receives federal funding and provides a legal pathway for Native Americans to claim and repatriate the remains of their ancestors. As ME/C offices receive federal funding by the distribution of these funds through the state to local government agencies and are often in the possession of non-forensic Native American remains, they fall within the legal purview of the law.

Chair:
Megan K. Kleeschulte, MA
University of Tennessee, Knoxville
Knoxville, TN

Co-Chair:
Amy Z. Mundorff, PhD
University of Tennessee, Knoxville
Knoxville, TN

Faculty:
Bruce E. Anderson, PhD
Pima County Office of the Medical Examiner
Forensic Science Center
Tucson, AZ

Ellen Lofaro, PhD
University of Tennessee, Knoxville
Knoxville, TN

Targeted Audience: Anthropology, General, Jurisprudence, Pathology/Biology

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 50 pages

Program Description: This workshop provides training on the application and protocols of NAGPRA for the medicolegal system. ME/C offices have been identified as systems that legally fall under the definition of museum as it is employed in NAGPRA and, therefore, are required to comply with the law's mandates. This workshop will cover the history leading to the passage of NAGPRA and will provide an in-depth discussion of the definitions included in the law and how they apply to the medicolegal system. This session will also provide hands-on training on how to determine whether your office is in possession or control of Native American remains, how to initiate consultation with tribes, what evidence should be used for making cultural affiliation determinations, how to fill out notice of inventory completion templates, how notices get published on the federal register, and how to facilitate the final physical transfer of remains when control of claimed remains transfers to claimant tribes. This hands-on training will be accomplished using different scenarios that mimic the various contextual situations practitioners may encounter regarding Native American remains.

Pre-Registration was required.

W11 The Native American Graves Protection and Repatriation Act (NAGPRA) and the Medicolegal System: Legal, Practical, and Ethical Considerations for Practitioners

Program:

8:30 a.m.	-	8:40 a.m.	**Welcome and Introduction** *Megan K. Kleeschulte, MA*
8:40 a.m.	-	9:40 a.m.	**History Leading to the Passage of NAGPRA** *Ellen Lofaro, PhD*
9:40 a.m.	-	10:30 a.m.	**The Law: Stipulations, Definitions and Terminology** *Megan K. Kleeschulte, MA*
10:30 a.m.	-	10:45 a.m.	**Break**
10:45 a.m.	-	11:15 a.m.	**Determining Forensic vs. Non-Forensic Significance** *Bruce E. Anderson, PhD*
11:15 a.m.	-	12:00 p.m.	**Distinguishing Native American Remains From Other Groups** *Bruce E. Anderson, PhD*
12:00 p.m.	-	1:00 p.m.	**Lunch**
1:00 p.m.	-	2:00 p.m.	**The NAGPRA Process: A Step-by-Step Review of Compliant Protocols** *Megan K. Kleeschulte, MA; Ellen Lofaro, PhD*
2:00 p.m.	-	2:30 p.m.	**The Pima County Office of the Medical Examiner: A Case Study** *Megan K. Kleeschulte, MA; Bruce E. Anderson, PhD*
2:30 p.m.	-	2:45 p.m.	**Break**
2:45 p.m.	-	5:15 p.m.	**Mock Scenarios** *Megan K. Kleeschulte, MA; Ellen Lofaro, PhD*

Pre-Registration was required.

W12 KidStats: Improving the Subadult Biological Profile

Monday

February 17, 2020 **8:30 a.m. – 5:15 p.m.** **7.25 CE Hours**

Learning Overview: After attending this workshop, attendees will be trained on the most up-to-date techniques to estimate subadult age and sex and on KidStats, a freely available web-based graphical user interface.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing attendees with applied experience in collecting subadult data from 3D printed remains of individuals between birth and 15 years and the application of these data in a statistical framework.

Chair:
Kyra E. Stull, PhD
University of Nevada, Reno
Department of Anthropology
Reno, NV

Co-Chair:
Heather M. Garvin, PhD
Des Moines University
Department of Anatomy
Des Moines, IA

Faculty:
Louise K. Corron, PhD
University of Nevada, Reno
Department of Anthropology
Reno, NV

Michael H. Price, PhD
Santa Fe Institute
Santa Fe, NM

Alexandra R. Klales, PhD
Washburn University
Forensic Anthropology Program
Topeka, KS

Targeted Audience: Anthropology

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 25 pages

Restricted Audience Size: 30

Pre-Registration was required.

W12 KidStats: Improving the Subadult Biological Profile

Program Description: Forensic anthropological research is generally less focused on the subadult biological profile, mainly because of the difficulty in accessing skeletal samples to develop techniques. Subsequently, methods development to estimate subadult parameters of the biological profile (e.g., age, sex, and stature) is lacking. A large sample of postmortem computed tomography images of children between birth and 20 years (~1,100) allowed for the development and validation of age and sex estimation techniques using a contemporary subadult sample. This workshop will provide information on the statistics that went into the development of these models and hands-on opportunities with 3D printed skeletal elements of individuals from the sample allowing for a direct opportunity to collect age and sex indicators. The workshop participants will also work with KidStats, a freely available graphical user interface allowing practitioners all around the world to estimate the age of children based on the age indicators collected.

Program:

8:30 a.m.	-	9:00 a.m.	**Welcome and Introduction** *Kyra E. Stull, PhD*
9:00 a.m.	-	9:15 a.m.	**The Subadult Study Sample** *Kyra E. Stull, PhD*
9:15 a.m.	-	10:15 a.m.	**Discussing Landmark Placement, Protocol Development, and Reliability of Indicators** *Heather M. Garvin, PhD; Alexandra R. Klales, PhD; Louise K. Corron, PhD*
10:15 a.m.	-	10:45 a.m.	**Subadult Sex Estimation (Pelvis)** *Heather M. Garvin, PhD; Alexandra R. Klales, PhD*
10:45 a.m.	-	11:00 a.m.	**Break**
11:00 a.m.	-	11:30 a.m.	**Subadult Sex Estimation (Pelvis and Long Bones)** *Kyra E. Stull, PhD*
11:30 a.m.	-	12:00 p.m.	**Stature and Body Mass Estimation** *Heather M. Garvin, PhD*
12:00 p.m.	-	1:00 p.m.	**Lunch**
1:00 p.m.	-	2:30 p.m.	**Subadult Age Estimation and Development of Mixed Cumulative Probit (MCP)** *Michael H. Price, PhD; Kyra E. Stull, PhD*
2:30 p.m.	-	2:45 p.m.	**Break**
2:45 p.m.	-	4:45 p.m.	**Hands-On With 3D Printed Subadult Material** *Kyra E. Stull, PhD; Heather M. Garvin, PhD; Alexandra R. Klales, PhD; Louise K. Corron, PhD*
4:45 p.m.	-	5:15 p.m.	**Concluding Remarks** *Kyra E. Stull, PhD*

Pre-Registration was required.

W13 A Primer on Multidisciplinary Investigations of Pediatric Injuries and Deaths

Monday

February 17, 2020 **8:30 a.m. – 5:30 p.m.** **7.25 CE Hours**

Learning Overview: Attendees will be able to demonstrate the ability to analyze and evaluate available data in a pediatric death or injury case to formulate a viable hypothesis regarding the actual mechanism of the pathology in question. After attending this presentation, attendees will be better able to differentiate and implement effective investigative techniques from lesser alternatives.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by exposing practitioners to an effective multidisciplinary team approach to prospectively work through investigations as they progress to a conclusion.

Chair:
J.C.U. Downs, MD
forensX, LLC
Savannah, GA

Co-Chair:
Joanna L. Collins, MFS
LINUS Investigations & Consulting
San Antonio, TX

Faculty:
Bonnie Armstrong, BS
The Shaken Baby Alliance
Boyd, TX

Robert N. Parrish, JD
Salt Lake County District Attorney's Office
Salt Lake City, UT

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

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 100 pages

Program Description: This workshop will teach investigators, physicians, scientists, attorneys, and others working on child deaths and injuries how to objectively and effectively gather, analyze, and appraise evidence in cases of pediatric injury and/or death

Proceeds from this workshop will benefit the Forensic Sciences Foundation, Inc.

Pre-Registration was required.

W13 A Primer on Multidisciplinary Investigations of Pediatric Injuries and Deaths

Program:

8:30 a.m.	-	8:45 a.m.	**Introduction, Objectives, and Purpose** *J.C.U. Downs, MD; Bonnie Armstrong, BS*
8:45 a.m.	-	9:45 a.m.	**Overview of Medical Aspects of Child Physical Abuse** *J.C.U. Downs, MD*
9:45 a.m.	-	10:00 a.m.	**Break**
10:00 a.m.	-	11:15 a.m.	**Forensic Investigative Techniques** *Bonnie Armstrong, BS*
11:15 a.m.	-	11:45 a.m.	**Interviews in Child Physical Abuse and Neglect: The Devil is in the Details—Part 1** *Bonnie Armstrong, BS; Robert N. Parrish, JD*
11:45 a.m.	-	12:45 p.m.	**Lunch**
12:45 p.m.	-	1:45 p.m.	**Interviews in Child Physical Abuse and Neglect: The Devil is in the Details—Part 2** *Bonnie Armstrong, BS; Robert N. Parrish, JD*
1:45 p.m.	-	2:15 p.m.	**Timeline Development—Part 1** *Bonnie Armstrong, BS*
2:15 p.m.	-	2:30 p.m.	**Break**
2:30 p.m.	-	3:30 p.m.	**Timeline Development—Part 2** *Bonnie Armstrong, BS*
3:30 p.m.	-	4:00 p.m.	**Pediatric Head Trauma—An Overview** *J.C.U. Downs, MD; Robert N. Parrish, JD*
4:00 p.m.	-	4:15 p.m.	**Break**
4:15 p.m.	-	5:15 p.m.	**Pediatric Head Trauma—How Thorough Investigation Impacts the Legal Case for Success** *Robert N. Parrish, JD*
5:15 p.m.	-	5:30 p.m.	**Discussion/Questions and Answers** *Bonnie Armstrong, BS; Robert N. Parrish, JD; J.C.U. Downs, MD*

Pre-Registration was required.

W14 Mass Disasters and Disaster Victim Identification (DVI)

Monday

February 17, 2020 **8:30 a.m. – 5:30 p.m.** **7.5 CE Hours**

Learning Overview: After attending this presentation, attendees will be able to: (1) understand the historical background of DVI; (2) recognize the need for standards and best practices; (3) understand the integrated contributions of the various forensic sciences to DVI; and (4) understand the critical relationship of the Victim Information Center to the identification process.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing attendees with an understanding of the current state of mass fatality victim identification as it exists in the United States. Presentations will encompass the breadth of the forensic sciences, including ethical considerations and the role of the Victim Information Center in mass fatality identifications.

Chair:
John A. Williams, PhD
Western Carolina University
Cullowhee, NC

Co-Chair:
Victor W. Weedn, MD, JD
The George Washington University
Washington, DC

Faculty:
Kenneth W. Aschheim, DDS
New York City, NY

Jason H. Byrd, PhD
University of Florida
Maples Center for Forensic Medicine
Gainesville, FL

Taylor M. Dickerson III, MSFS
SNA International
Armed Forces DNA Identification Laboratory
Dover Air Force Base, DE

Anthony B. Falsetti, PhD
College of Science, Forensic Science Program
Fairfax, VA

Cynthia Gavin, PhD
Parkville, MD

Bryan Johnson, MSFS
Federal Bureau of Investigation
Quantico, VA

Jason M. Wiersema, PhD
Harris County Institute of Forensic Science
Houston, TX

Targeted Audience: Anthropology, Criminalistics, General, Jurisprudence, Odontology, Pathology/Biology

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 275 pages

Program Description: DVI is the comprehensive process of human identification as applied to mass fatality events. Although by definition a mass fatality event is any situation that overwhelms local resources, we generally think of a situation is which identification is hampered by the event and recovery process. Human remains that have been badly traumatized, heavily decomposed, or recovered outside of their normal context are examples that fit this description. In response to the 2009 National Academy of Sciences (NAS) Report, a movement to create standards within the forensic sciences was started. DVI was included and the creation of standards and best practices within the field are ongoing. DVI is the concerted and combined efforts of dedicated scientists, specialists, and governmental and private agencies. It is practiced under far-less-than-perfect conditions under circumstances that are often politically and culturally charged.

Pre-Registration was required.

W14 Mass Disasters and Disaster Victim Identification (DVI)

Program:

8:30 a.m.	-	8:45 a.m.	**Welcome and Introduction** *John A. Williams, PhD*
8:45 a.m.	-	9:15 a.m.	**Historical Considerations in DVI** *Victor W. Weedn, MD, JD*
9:15 a.m.	-	10:00 a.m.	**Odontology and DVI** *Kenneth W. Aschheim, DDS*
10:00 a.m.	-	10:30 a.m.	**Public and Private Agencies in DVI** *John A. Williams, PhD*
10:30 a.m.	-	10:45 a.m.	**Break**
10:45 a.m.	-	11:45 a.m.	**The Case for Standards** *Jason M. Wiersema, PhD*
11:45 a.m.	–	12:30 p.m.	**The Role of the Forensic Sciences in DVI** *Anthony B. Falsetti, PhD*
12:30 p.m.	-	1:30 p.m.	**Lunch**
1:30 p.m.	-	2:00 p.m.	**Fingerprint Identification** *Bryan Johnson, MSFS*
2:00 p.m.	-	3:00 p.m.	**DNA Identification** *Taylor M. Dickerson III, MSFS*
3:00 p.m.	-	3:15 p.m.	**Break**
3:15 p.m.	-	4:00 p.m.	**The Victim Identification Center** *Jason H. Byrd, PhD*
4:00 p.m.	-	4:30 p.m.	**Ethical Considerations in DVI** *Victor W. Weedn, MD, JD*
4:30 p.m.	-	5:15 p.m.	**DVI in the 21st Century** *Cynthia Gavin, PhD*
5:15 p.m.	-	5:30 p.m.	**Concluding Comments** *John A. Williams, PhD*

Pre-Registration was required.

W15 Dementia Workup for Forensic Pathologists Following a Condensed National Institute on Aging-Alzheimer's Association (NIA-AA) Protocol

Tuesday

February 18, 2020 **8:30 a.m. – 12:00 p.m.** **3.25 CE Hours**

Learning Overview: After attending this presentations, attendees will: (1) become familiar with the diagnostic workup and grading schemes for common classes of dementia; (2) be able to accurately identify and sample appropriate regions of the brain according to the Condensed Protocol for dementia workup; and (3) understand the benefits and limitations of the Condensed and NIA-AA Protocols for dementia workup.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by presenting a method that reduces the cost of histopathologic dementia workup while maintaining diagnostic performance.

Chair:
Nicole A. Yarid, MD
King County Medical Examiner's Office
Seattle, WA

Co-Chair:
Richard C. Harruff, MD, PhD
King County Medical Examiner's Office
Seattle, WA

Faculty:
Rebecca Folkerth, MD
City of New York Office of Chief Medical Examiner
New York City, NY

Desiree A. Marshall, MD
University of Washington Harborview Medical Center
Seattle, WA

C. Dirk Keene, MD, PhD
University of Washington Harborview Medical Center
Seattle, WA

Rebecca A. Yoda, MD
University of Washington Harborview Medical Center
Seattle, WA

Targeted Audience: Pathology/Biology

Knowledge Level Required: Advanced (highly technical)

Expected Handout Length: 50

Restricted Audience Size: 50

Pre-Registration was required.

W15 Dementia Workup for Forensic Pathologists Following a Condensed National Institute on Aging-Alzheimer's Association (NIA-AA) Protocol

Program Description: This workshop will present a clear and cost-reducing protocol for neuropathologic evaluation of potential dementia cases that maintains the diagnostic performance of the NIA-AA guidelines in assessing Alzheimer dementia, Lewy body disease, microvascular brain injury, hippocampal sclerosis, and congophilic amyloid angiopathy.

Program:

8:30 a.m.	-	8:50 a.m.	**Dementia in the Forensic Pathology Setting** *Nicole A. Yarid, MD*
8:50 a.m.	-	9:15 a.m.	**NIA-AA-Sponsored Guidelines and Development of Condensed Protocol for Dementia Assessment** *C. Dirk Keene, MD, PhD*
9:15 a.m.	-	9:45 a.m.	**The Application and Performance of Condensed Protocol for Dementia Assessment** *Desiree A. Marshall, MD*
9:45 a.m.	-	10:00 a.m.	**Break**
10:00 a.m.	-	10:30 a.m.	**The Use of the Condensed Protocol for Dementia Workup in a Forensic Setting** *Rebecca Folkerth, MD*
10:30 a.m.	-	11:45 a.m.	**A Demonstration of Condensed Protocol** *Rebecca A. Yoda, MD*
11:45 a.m.	-	12:00 p.m.	**Summary and Discussion** *Nicole A. Yarid, MD*

Pre-Registration was required.

W16 Forensic Multimedia Authentication: Real-Life Challenges

Tuesday

February 18, 2020 **8:30 a.m. – 12:00 p.m.** **3.0 CE Hours**

Learning Overview: After attending this workshop, attendees will: (1) become familiar with the latest developments in forensic video and audio authentication, enhancement, and restoration; (2) understand criteria used for media authentication; (3) understand how to conduct analysis within a forensic framework; and (4) explore the latest technologies in the generation of synthetic imagery, including deepfakes, face2face, and others.

Impact on the Forensic Science Community: This workshop will impact the forensic community by: (1) explaining the scientific approach in forensic media authentication, enhancement, and restoration; (2) demonstrating an authentication investigation framework; and (3) discussing tools used to create and combat multimedia forgery.

Chair:
Zeno J. Geradts, PhD
Netherlands Forensic Institute
Den Haag, NETHERLANDS

Faculty:
Catalin Grigoras, PhD
Denver, CO

Leonid I. Rudin, PhD
Cognitech
Pasadena, CA

Co-Chair:
Jeff M. Smith, MS
University of Colorado Denver
National Center for Media Forensics
Denver, CO

Gregory S. Wales, MS
United States Department of Interior
Office of the Inspector General
Computer Crimes Unit, Digital Forensic Lab
Lakewood, CO

Targeted Audience: Digital & Multimedia Sciences

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 250 Pages

Pre-Registration was required.

W16 Forensic Multimedia Authentication: Real-Life Challenges

Program Description: This workshop on the impact of emerging technologies on multimedia forensics will examine the new and emerging technologies affecting multimedia forensics today and over the coming decades. The information shared during the workshop is from academics, researchers, and practitioners currently working and researching in these new technology areas. Participants will be informed of the latest developments in forensic video and audio authentication, enhancement, and restoration. This includes the latest technologies in the generation of synthetic imagery, including deepfakes, face2face, and others. This workshop assembles an experienced group of people impacting the world of multimedia forensics on a variety of topics.

Program:

8:30 a.m.	-	9:00 a.m.	**Video DeepFakes, Face2Face, and FaceSwap** *Jeff M. Smith, MS*
9:00 a.m.	-	9:30 a.m.	**Adaptive 3D Face Models for Denoising, Deblurring, and Superresolution of Human Faces in Closed-Circuit Television (CCTV)** *Leonid I. Rudin, PhD*
9:30 a.m.	-	9:45 a.m.	**Break**
9:45 a.m.	-	10:15 a.m.	**DeepFake and Video Authentication** *Zeno J. Geradts, PhD*
10:15 a.m.	-	10:45 a.m.	**Video Authentication Framework** *Gregory S. Wales, MS*
10:45 a.m.	-	11:00 a.m.	**Break**
11:00 a.m.	-	11:30 a.m.	**Audio Authentication** *Catalin Grigoras, PhD*
11:30 a.m.	-	12:00 p.m.	**Deepvoice** *Catalin Grigoras, PhD*

Pre-Registration was required.

W17 The Murder of Women: A Global Issue That Demands Action

Tuesday

February 18, 2020 **8:30 a.m. – 12:00 p.m.** **3.0 CE Hours**

Learning Overview: After attending this presentation, attendees will understand and recognize how discrimination against women prevails throughout the world, and how violence against women, a serious violation of human rights, is the most severe consequence of such discrimination. The Inter-American Court of Human Rights defined femicide as "the murder of women by gender" considering that these deaths result from structural and social attitudes, rooted in a culture of gender-based violence and discrimination. Acts of violence against women based on their status as women demand the serious and specific attention of the international community.

Attendees will become more aware of the various types of violence that are manifested in many ways. Most victims are raped and many are mutilated, tortured, or dismembered. Femicide is a complex phenomenon, ranging from the murder of women by their partners or ex-partners, to their kidnapping followed by rape and subsequent killing committed by unknown perpetrators, to ritual crimes performed by sects or other groups.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by empowering attendees to understand that is an obligation of the United States to prevent and eradicate femicide and to adopt administrative, legislative, and judicial measures to prohibit gender discrimination. States must ensure the exercise of the rights of women and pursue, by all appropriate means and without delay, policies that prevent, punish, and eradicate violence against women. States have the obligation to standardize all their protocols and manuals; to update their research criteria; and to restructure the administration of justice related to investigate disappearances, sexual violence, and murder of women. These measures have implications not only for the United States, but also for other systems of human rights protection, such as the European Court of Human Rights. After implementation of various policies addressing this crucial issue, states should be held responsible for lack of diligence in investigations, lack of access to justice for the families of the victims, and therefore for the impunity of the perpetrators. To sum up, states are responsible for taking the necessary steps to ensure a life free of violence for women.

Chair:
Vivian Chern Shnaidman, MD
Princeton, NJ

Co-Chair:
Cinzia Gimelli, PsyD, PhD
Science & Method
Reggio Emilia, ITALY

Faculty:
Luciano Garofano, PhD
Accademia Italiana di Scienze Forensi
Parma, ITALY

Ariel V. Tabachnik, BS
Rutgers Robert Wood Johnson Medical School
Piscataway, NJ

Maurizio Saliva, MD
Pozzuoli, ITALY

Targeted Audience: Criminalistics, Jurisprudence, Pathology/Biology, Psychiatry & Behavioral Science

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 30 Pages

Pre-Registration was required.

W17 The Murder of Women: A Global Issue That Demands Action

Program Description: This workshop will show how to monitor the issue of femicide in the future and what types of data and information will be used. Scientists think it reasonable to create scientifically based monitoring with a proper strategy together with all national and international partners. Such a structure must promote the creation of comparable national databases, while also systematically involving existing international systems of data collection and their experience. It became very clear, during research, that the collection of police data alone would not be sufficient for analyzing the cases in the detail needed for prevention and intervention. Therefore, many countries have adopted the strategy of collecting information on all the cases known to the media and collating it with the criminological data and—insofar as is possible—data recorded by health and support systems. This strategy makes it possible to obtain more background information on femicides, which is important for future prevention and early interventions. In order to stabilize the collection of data and information at the European level, it is important to publicly finance work resources at the national level in order to create and continuously update national databases in a way that makes international comparison possible. Furthermore, a scientifically based monitoring body must coordinate data collection and supply it to joint databases. Only in this way will it be possible, in the long-term, to create a bigger pool of data that allows deeper analysis and prevention of the problem at the European, American, and international level.

Program:

8:30 a.m.	-	8:40 a.m.	**Welcome** *Vivian Chern Shnaidman, MD; Cinzia Gimelli, PsyD, PhD; Luciano Garofano, PhD*
8:40 a.m.	-	9:00 a.m.	**An Introduction to Femicide: A Cross Psycho-Social Problem of Global Entity—Italian and United States Data** *Cinzia Gimelli, PsyD, PhD; Ariel V. Tabachnik, BS*
9:00 a.m.	-	10:00 a.m.	**New Forms of Cyber-Mediated Gender-Based Violence** *Ariel V. Tabachnik, BS*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	10:37 a.m.	**Italian and United States Laws and Their Effects on the Phenomenon Over the Years** *Luciano Garofano, PhD; Vivian Chern Shnaidman, MD; Cinzia Gimelli, PsyD, PhD*
10:37 a.m.	-	11:00 a.m.	**The Structure, Role, and Functions of Italian and United States Prevention Field Agencies** *Cinzia Gimelli, PsyD, PhD; Vivian Chern Shnaidman, MD*
11:00 a.m.	-	11:45 a.m.	**What Didn't Work? Real Cases in Which Prevention Failed: Femicide Under the Influence of Impulses and the Path Forward** *Luciano Garofano, PhD; Maurizio Saliva, MD; Vivian Chern Shnaidman, MD*
11:45 a.m.	-	12:00 p.m.	**Questions and Answers** *Cinzia Gimelli, PsyD, PhD; Vivian Chern Shnaidman, MD; Luciano Garofano, PhD; Maurizio Saliva, MD; Ariel V. Tabachnik, BS*

Pre-Registration was required.

W18 Injury Biomechanics: An Interdisciplinary Approach and Forensic Applications

Tuesday

February 18, 2020 **8:30 a.m. – 12:30 p.m.** **3.5 CE Hours**

Learning Overview: After attending this workshop, attendees will comprehend the advantages of using an interdisciplinary team to address questions concerning injury biomechanics and associated trauma analysis. Attendees will be exposed to the applications of injury biomechanics across multiple scientific disciplines through presentations and hands-on experiences. Additionally, attendees will be introduced to the value of experimental testing in developing and validating forensic methods of injury analysis and the importance of scientific validity and error rates.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by providing attendees with an introduction to injury biomechanics and the applications of this research to forensic anthropology, engineering and applied sciences, and forensic pathology.

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

Co-Chair:
Angela L. Harden, MA
The Ohio State University
Columbus, OH

Faculty:
John H. Bolte, PhD
The Ohio State University
Columbus, OH

Yun-Seok Kang, PhD
The Ohio State University
Columbus, OH

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

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 50 Pages

Pre-Registration was required.

W18 Injury Biomechanics: An Interdisciplinary Approach and Forensic Applications

Program Description: Injury biomechanics is the science that relates mechanical forces to disruption of anatomical regions of the human body. This multidisciplinary field encompasses engineering, physics, and medicine and can offer improved validity of trauma analyses and interpretation to the field of forensic anthropology. This workshop will provide attendees with an introduction to injury biomechanics, applications, and limitations of forensic injury biomechanics, how to effectively collect and analyze quantitative data used in injury biomechanics, experimental design, in addition to detailed presentations on current experimental research with subsequent trauma evaluation and interpretations. Presentations will demonstrate the importance and value of interdisciplinary experimental research to trauma analyses, re-creating traumatic events, and expert testimonies. An emphasis will be on skeletal trauma. Attendees will have the opportunity to discuss the role of injury biomechanics in forensic fields with the panel of experts. Attendees will leave the workshop with a greater understanding of the contributions of experimental research to forensic applications.

Program:

8:30 a.m.	-	8:40 a.m.	**Welcome and Introductions** *Amanda M. Agnew, PhD; Angela L. Harden, MA; John H. Bolte, PhD; Yun-Seok Kang, PhD*
8:40 a.m.	-	9:00 a.m.	**Introduction to the Field of Injury Biomechanics** *John H. Bolte, PhD*
9:00 a.m.	-	9:45 a.m.	**Applications and Limitations of Forensic Injury Biomechanics** *Angela L. Harden, MA; Amanda M. Agnew, PhD*
9:45 a.m.	-	10:00 a.m.	**Break**
10:00 a.m.	-	10:30 a.m.	**Quantitative Data and Experimental Design** *Yun-Seok Kang, PhD; John H. Bolte, PhD*
10:30 a.m.	-	11:30 a.m.	**An Experimental Research Project: Thoracic Trauma** *Amanda M. Agnew, PhD; Yun-Seok Kang, PhD; John H. Bolte, PhD; Angela L. Harden, MA*
11:30 a.m.	-	12:15 p.m.	**Experimental Research Project: Underbody Blast Trauma** *John H. Bolte, PhD; Amanda M. Agnew, PhD*
12:15 p.m.	-	12:30 p.m.	**Questions and Answers** *Amanda M. Agnew, PhD; Angela L. Harden, MA; John H. Bolte, PhD; Yun-Seok Kang, PhD*

Pre-Registration was required.

W19 Think Tank on the Leading Edge of Forensic Science, Including Robotics, Drug Intelligence, Analytical Chemistry, Technology Rules, Bayesian Approach, Legal Technology Developments, Research and Development (R&D) in a Forensic Lab, Veterinary Forensics, and Aquatic Death Investigation

Tuesday

February 18, 2020 **8:30 a.m. – 12:30 p.m.** **3.75 CE Hours**

Learning Overview: After attending this presentation, attendees will better understand the various new advances in forensic science that promise to have an important impact on their work.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by discussing the absolute latest new developments in robotics, drug intelligence, analytical chemistry technology rules, Bayesian approach, legal technology developments, R&D in a forensic lab, veterinary forensics, and aquatic death investigations. This workshop will help attendees be on the leading edge.

Chair:
Laura L. Liptai, PhD
BioMedical Forensics HQ CA/FL
Moraga, CA

Co-Chair:
Zeno J. Geradts, PhD
Netherlands Forensic Institute
Den Haag, NETHERLANDS

Faculty:
Ivo Alberink, PhD
Netherlands Forensic Institute
Den Haag, NETHERLANDS

Annemieke de Vries, PhD
Netherlands Forensic Institute
Den Haag, NETHERLANDS

Stephanie Domitrovich, JD, PhD
Sixth Judicial District of Pennsylvania
Erie, PA

Kevin W.P. Miller, PhD
Hamilton Robotics
Reno, NV

Jeri D. Ropero-Miller, PhD
RTI International
Research Triangle Park, NC

Martha Smith-Blackmore, DVM
Forensic Veterinary Investigations, LLC
Boston, MA

Arian C. Van Asten, PhD
University of Amsterdam
Amsterdam, NETHERLANDS

Sheila Willis, PhD
National Institute of Standards and Technology
Gaithersburg, MD

Andrea Zaferes, BA
Dutchess County Medical Examiner Office
Shokan, NY

Targeted Audience: All Disciplines

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 80 Pages

Pre-Registration was required.

W19 Think Tank on the Leading Edge of Forensic Science, Including Robotics, Drug Intelligence, Analytical Chemistry, Technology Rules, Bayesian Approach, Legal Technology Developments, Research and Development (R&D) in a Forensic Lab, Veterinary Forensics, and Aquatic Death Investigation

Program Description: Experts from all over the world will discuss the new developments that are in the process of revolutionizing forensic science. The speakers are the best of the best within each of their areas of expertise. Practical examples will be presented on robotics, drug intelligence, analytical chemistry, technology rules, Bayesian approach, legal technology developments, R&D in a forensic lab, veterinary forensics, and aquatic death investigations. This presentation will provide an overview of exciting new advances and open a forum for the discussion of issues that may arise regarding these new developments that will ultimately impact the forensic science community. A wide variety of new technology that will soon impact forensic scientist has been identified within the AAFS Think Tank Committee.

Program:

8:30 a.m.	-	8:40 a.m.	**Opening Remarks** *Laura L. Liptai, PhD*
8:40 a.m.	-	9:05 a.m.	**Managing R&D in a Forensic Lab in a Fast-Changing World** *Annemieke de Vries, PhD*
9:05 a.m.	-	9:30 a.m.	**Emerging Drug Threats and Drug Intelligence** *Jeri D. Ropero-Miller, PhD*
9:30 a.m.	-	9:55 a.m.	**An Example of Bayesian Approach in Forensic Reports** *Ivo Alberink, PhD*
9:55 a.m.	-	10:20 a.m.	**Technology Rules OK?** *Sheila Willis, PhD*
10:20 a.m.	-	10:30 a.m.	**Break**
10:30 a.m.	-	10:55 a.m.	**Most Important Legal Technology Developments in 2019–2020** *Stephanie Domitrovich, JD, PhD*
10:55 a.m.	-	11:20 a.m.	**Aquatic Death/Abuse Investigations Need to Stop Breaking Basic Scene Investigation Standards and Need to Require Specialized Training** *Andrea Zaferes, BA*
11:20 a.m.	-	11:35 a.m.	**New Developments in Forensic Analytical Chemistry** *Arian C. Van Asten, PhD*
11:35 a.m.	-	11:55 a.m.	**Integrating Robotics Into Forensics** *Kevin W.P. Miller, PhD*
11:55 a.m.	-	12:15 p.m.	**Veterinary Forensics** *Martha Smith-Blackmore, DVM*
12:15 p.m.	-	12:30 p.m.	**Closing Remarks** *Zeno J. Geradts, PhD*

Pre-Registration was required.

W20 Genetic Genealogy: Science, Law, and Ethics

Tuesday

February 18, 2020 **8:30 a.m. – 4:45 p.m.** **6.75 CE Hours**

Learning Overview: After attending this workshop, attendees will have a better understanding of how genetic genealogy works, how it is used by law enforcement, its admissibility in court, and the ethics of using personal DNA data of relatives to solve crimes.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by providing a clear understanding of the use of genetic genealogy to solve crimes and to better equip forensic scientists to appreciate the legal and ethical issues that it presents.

Chair:
Donald E. Shelton, JD, PhD
University of Michigan-Dearborn
Criminal Justice Program
Dearborn, MI

Co-Chair:
Frederick R. Bieber, PhD
Brigham & Women's Hospital
Department of Pathology
Boston, MA

Faculty:
Russell S. Babcock, JD
Law Office of Russell Babcock
San Diego, CA

Henry T. Greely, JD
Stanford University
Stanford, CA

Ellen M. Greytak, PhD
Parabon NanoLabs, Inc.
Reston, VA

Ted R. Hunt, JD
United States Department of Justice
Washington, DC

Roderick T. Kennedy, JD
Los Ranchos, NM

CeCe Moore
Reston, VA

Targeted Audience: Criminalistics, General, Jurisprudence, Pathology/Biology, Psychiatry & Behavioral Science

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 100 Pages

Program Description: Since the identification and arrest of the suspect in the "Golden State Killer" investigation in early 2018 using novel DNA and genealogy tools, dozens of law enforcement investigators in North America have effectively used such methods in high-profile cold cases. This workshop includes a description of the DNA technology used, the database search process itself, the methods of genealogy searching, and the legality and ethics of the process, all from expert leaders in those fields. Speakers include CeCe Moore, the genealogist who pioneered the method in the "Golden State Killer" case, biomedical DNA specialists, lawyers, professors, and ethics experts.

Pre-Registration was required.

W20 Genetic Genealogy: Science, Law, and Ethics

Program:

8:30 a.m.	-	8:45 a.m.	**Introduction** *Donald E. Shelton, JD, PhD*
8:45 a.m.	-	9:15 a.m.	**The DNA Revolution in Genealogy** *Donald E. Shelton, JD, PhD*
9:15 a.m.	-	10:00 a.m.	**Ethics and Legality in Genetic Genealogy** *Henry T. Greely, JD*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	11:00 a.m.	**Modern DNA Developments—From Short Tandem Repeats (STRs) to Single Nucleotide Polymorphisms (SNPs) to Genome Sequencing** *Frederick R. Bieber, PhD*
11:00 a.m.	-	11:45 a.m.	**How Genetic Genealogy Works** *CeCe Moore*
11:45 a.m.	-	12:15 p.m.	**Panel Discussion and Questions** *Donald E. Shelton, JD, PhD; Frederick R. Bieber, PhD; CeCe Moore; Ellen M. Greytak, PhD*
12:15 p.m.	-	1:15 p.m.	**Lunch**
1:15 p.m.	-	1:35 p.m.	**Partnering DNA With Genealogy** *Ellen M. Greytak, PhD*
1:35 p.m.	-	2:00 p.m.	**Admissibility Issues from the Prosecution Perspective** *Donald E. Shelton, JD, PhD*
2:00 p.m.	-	2:30 p.m.	**Admissibility Issues from the Defense Perspective** *Russell S. Babcock, JD*
2:30 p.m.	-	3:00 p.m.	**Admissibility Issues from the Judicial Perspective** *Roderick T. Kennedy, JD*
3:00 p.m.	-	3:15 p.m.	**Break**
3:15 p.m.	-	4:00 p.m.	**Department of Justice Policy Regarding Genetic Genealogy and Law Enforcement** *Ted R. Hunt, JD*
4:00 p.m.	-	4:15 p.m.	**Reflections on the Ethics of Genetic Genealogy** *Donald E. Shelton, JD, PhD*
4:15 p.m.	-	4:45 p.m.	**Panel Discussion and Questions** *Donald E. Shelton, JD, PhD; Frederick R. Bieber, PhD; Russell S. Babcock, JD; Roderick T. Kennedy, JD*

Pre-Registration was required.

W21 A Decade of Designer Drugs: Lessons Learned and Future Directions

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **6.75 CE Hours**

Learning Overview: After attending this workshop, attendees will be able to: (1) discuss current and past trends in Novel Psychoactive Substances (NPS); (2) describe and explain the means by which new substances are assessed for their potency and toxicity; (3) identify resources and strategies for the investigation of NPS toxicity outbreaks and impacts on user populations; (4) assess the available analytical techniques for resolving the identity of positional isomers of new drugs; and (5) apply best practices in the use of standard reference materials and proficiency testing for forensic NPS casework.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a ten-year perspective on how forensic and research sciences responded to the phenomenon of designer drugs, later NPS, the tools and workflows that have been developed, current approaches to evaluating drug toxicity, the impact of NPS on drug user behavior, and best practices for the future identification of structural identity and detail of newly emergent substances.

Chair:
Donna M. Papsun, MS
NMS Labs
Willow Grove, PA

Co-Chair:
Barry K. Logan, PhD
NMS Labs
Willow Grove, PA

Faculty:
Michael H. Baumann, PhD
Intramural Research Program, National Institute on Drug Abuse, National Institutes of Health
Baltimore, MD

Jennifer Bonetti, MS
Virginia Department of Forensic Science
Norfolk, VA

Michael B. Gatch, PhD
University of North Texas Health Science Center
Fort Worth, TX

Marilyn A. Huestis, PhD
Huestis & Smith Toxicology, LLC
Severna Park, MD

Donna M. Iula, PhD
Cayman Chemical
Ann Arbor, MI

Alex J. Krotulski, MS
Center for Forensic Science Research & Education
Willow Grove, PA

Robert A. Middleberg, PhD
NMS Labs
Willow Grove, PA

Amanda L.A. Mohr, MSFS
Center for Forensic Science Research & Education
Willow Grove, PA

Christopher Moraff, MS
Temple University
Philadelphia, PA

Aaron Urbas, PhD
National Institute of Standards and Technology
Gaithersburg, MD

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

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 250 Pages

Sponsored by: NMS Labs, Inc.

Program Description: This workshop will bring together forensic chemists, medical examiners, death investigators, forensic toxicologists, emergency responders, and public health officials to reflect on the past decade of NPS. This workshop will provide a forum in which experts across different disciplines can share their varying perspectives on the NPS epidemic.

Pre-Registration was required.

W21 A Decade of Designer Drugs: Lessons Learned and Future Directions

Program:

8:30 a.m.	-	9:00 a.m.	**NPS Strengths, Weaknesses, Opportunities, Threats (SWOT): A Ten-Year Perspective** *Barry K. Logan, PhD*
9:00 a.m.	-	9:30 a.m.	**Current NPS Trends** *Donna M. Papsun, MS*
9:30 a.m.	-	10:00 a.m.	***In Vitro* and *In Vivo* Animal Models for Establishing Receptor Binding and Functional Effect of NPS Stimulants** *Michael H. Baumann, PhD*
10:00 a.m.	-	10:30 a.m.	**An Assessment of Potency and Toxicity for Emerging Synthetic Cannabinoids** *Michael B. Gatch, PhD*
10:30 a.m.	-	10:45 a.m.	**Break**
10:45 a.m.	-	11:15 a.m.	**Outbreak Investigations Involving Synthetic Cannabinoids in Combination With Fentanyl** *Alex J. Krotulski, MS*
11:15 a.m.	-	11:45 a.m.	**The Impact of NPS in the Street Drug Supply on Drug User Behavior** *Christopher Moraff, MS*
11:45 a.m.	-	12:15 p.m.	**NPS Use in Vulnerable Populations** *Amanda L.A. Mohr, MSFS*
12:15 p.m.	-	1:30 p.m.	**Lunch**
1:30 p.m.	-	2:00 p.m.	**The Development of the Organization of Scientific Area Committees (OSAC) Standard for Criteria for Mass Spectral Identification of Novel Substances** *Marilyn A. Huestis, PhD*
2:00 p.m.	-	2:30 p.m.	**Mass Spectral Differentiation of Positional Isomers Using Multivariate Statistics** *Jennifer Bonetti, MS*
2:30 p.m.	-	3:00 p.m.	**The Use of Benchtop Nuclear Magnetic Resonance (NMR) for Positional Isomer Determination** *Aaron Urbas, PhD*
3:00 p.m.	-	3:30 p.m.	**The Preparation of NPS Standard Reference Materials** *Donna M. Iula, PhD*
3:30 p.m.	-	3:45 p.m.	**Break**
3:45 p.m.	-	4:15 p.m.	**Proficiency Testing for NPS** *Robert A. Middleberg, PhD*
4:15 p.m.	-	5:00 p.m.	**Panel Discussion** *Donna M. Papsun, MS; Barry K. Logan, PhD; Michael H. Baumann, PhD; Alex J. Krotulski, MS; Jennifer Bonetti, MS; Robert A. Middleberg, PhD; Michael B. Gatch, PhD; Amanda L.A. Mohr, MSFS; Marilyn A. Huestis, PhD; Christopher Moraff, MS; Donna M. Iula, PhD; Aaron Urbas, PhD*

Pre-Registration was required.

W22 "All Rise": Successfully Navigating the Judicial System as an Expert Witness

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **6.75 CE Hours**

Learning Overview: After attending this workshop, attendees will be well-versed in the decorum, procedures, expectations, and environment of a modern United States courtroom through active participation in the process.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by offering real-world experience in expert testimony in an environment conducive to productive learning without the stress of an actual trial.

Chair:
Laura C. Fulginiti, PhD
Forensic Science Center
Phoenix, AZ

Co-Chair:
Daniel G. Martin, JD
Superior Court of Arizona
Phoenix, AZ

Faculty:
Katelyn L. Bolhofner, PhD
Arizona State University
Glendale, AZ

Kristin Larish, JD
Maricopa County Attorney's Office
Phoenix, AZ

Betty Layne DesPortes, JD, MS
Benjamin & DesPortes, PC
Richmond, VA

Andrew C. Seidel, PhD
Arizona State University
Tempe, AZ

Kristen Hartnett-McCann, PhD
Office of the Chief Medical Examiner
Farmington, CT

Targeted Audience: All Disciplines

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 50 Pages

Restricted Audience Size: 50

Program Description: This workshop is designed to introduce and expand the understanding of expert witnesses who are confronted with the judicial process as part of their work. Using an actual courtroom set-up, the organizers plan to include the attendees in real-life scenarios as expert witnesses on the stand and as jurors evaluating the proffered testimony.

Pre-Registration was required.

W22 "All Rise": Successfully Navigating the Judicial System as an Expert Witness

Program:

8:30 a.m.	-	8:35 a.m.	**Introduction** *Laura C. Fulginiti, PhD*
8:35 a.m.	-	9:20 a.m.	**The United States Judicial System** *Daniel G. Martin, JD*
9:20 a.m.	-	9:50 a.m.	**The Expert's Role in the Judicial Process** *Laura C. Fulginiti, PhD*
9:50 a.m.	-	10:10 a.m.	**Break**
10:10 a.m.	-	10:25 a.m.	**Courtroom Basics** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA; Kristin Larish, JD*
10:25 a.m.	-	10:45 a.m.	**Pretrial Hearings: *Daubert* Demonstration** *Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD*
10:45 a.m.	-	11:05 a.m.	**Trial Practice 1: Credentialing** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
11:05 a.m.	-	11:25 a.m.	**Trial Practice 2: Credentialing** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
11:25 a.m.	-	11:45 a.m.	**Trial Practice 3: Fact Witnesses** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
11:45 a.m.	-	12:45 p.m.	**Lunch**
12:45 p.m.	-	1:05 p.m.	**Trial Practice 4: Fact Witnesses** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
1:05 p.m.	-	1:25 p.m.	**Trial Practice 5: Fact Witnesses** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
1:25 p.m.	-	1:45 p.m.	**Trial Practice 6: Professional Opinions** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*

Pre-Registration was required.

W22 "All Rise": Successfully Navigating the Judicial System as an Expert Witness

Program cont.:

1:45 p.m.	-	2:05 p.m.	**Trial Practice 7: Professional Opinions** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
2:05 p.m.	-	2:25 p.m.	**Trial Practice 8: Professional Opinions** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
2:25 p.m.	-	2:45 p.m.	**Trial Practice 9: Professional Opinions** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
2:45 p.m.	-	3:00 p.m.	**Break**
3:00 p.m.	-	3:20 p.m.	**Trial Practice 10: Managing Aggressive Cross-Examination** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
3:20 p.m.	-	3:40 p.m.	**Trial Practice 11: Managing Aggressive Cross-Examination** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
3:40 p.m.	-	4:00 p.m.	**Trial Practice 12: Managing Aggressive Cross-Examination** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
4:00 p.m.	-	4:20 p.m.	**Trial Practice 13: Re-Direct Examination** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
4:20 p.m.	-	4:40 p.m.	**Trial Practice 14: Re-Direct Examination** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*
4:40 p.m.	-	5:00 p.m.	**Questions and Answers/Closing Remarks** *Laura C. Fulginiti, PhD; Daniel G. Martin, JD; Betty Layne DesPortes, JD, MS; Kristin Larish, JD; Kristen Hartnett-McCann, PhD; Katelyn L. Bolhofner, PhD; Andrew C. Seidel, MA*

Pre-Registration was required.

W23 Dispelling the Myths About the Forensic Examination of Handprinting

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **6.75 CE Hours**

Learning Overview: After attending this workshop, attendees will be informed about the development of manuscript handprinting, motor-control theories regarding how handprinting is learned, examination techniques with handprinting, and will conduct hands-on examinations of genuine and simulated handprinting.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by informing attendees on the history and development of manuscript handprinting, and will enhance their abilities to conduct handprinting examinations. Attendees will also be prepared to defend the reliability of handprinting examinations in court.

Chair:
Linton Mohammed, PhD
Forensic Science Consultants, Inc
Burlingame, CA

Co-Chair:
Linda L. Mitchell, BS
Forensic QDE Lab, LLC
Escondido, CA

Faculty:
Brett Bishop
Cheney, WA

Lloyd Cunningham
Alamo, CA

Katelyn E. Bruno, MFS
Quantico, VA

Targeted Audience: Questioned Documents

Knowledge Level Required: Intermediate (some knowledge of subject presented)

Expected Handout Length: 20 Pages

Program Description: This full-day workshop will provide attendees with knowledge of the development of handprinting from the schoolroom and from motor control principles. Recent cases in which the reliability of handprinting evidence was criticized will be discussed. There will be a significant hands-on component in which attendees will be able to learn techniques of examining genuine and simulated handprinting.

Pre-Registration was required.

W23 Dispelling the Myths About the Forensic Examination of Handprinting

Program:

8:30 a.m.	-	8:45 a.m.	**Introduction** *Linton Mohammed, PhD*
8:45 a.m.	-	9:00 a.m.	**Introduction to Handprinting** *Lloyd Cunningham*
9:00 a.m.	-	9:20 a.m.	**The Federal Bureau of Investigation (FBI) Bank Robbery Notes Collection** *Katelyn E. Bruno, MFS*
9:20 a.m.	-	10:00 a.m.	**Handwriting Terminology** *Lloyd Cunningham*
10:00 a.m.	-	10:20 a.m.	**Break**
10:20 a.m.	-	10:40 a.m.	**The History and Development of Handprinting** *Lloyd Cunningham*
10:40 a.m.	-	11:30 a.m.	**Twenty-One Discriminating Elements of Handprinting** *Lloyd Cunningham*
11:30 a.m.	-	12:00 p.m.	**Motor Control Aspects of Handprinting** *Lloyd Cunningham*
12:00 p.m.	-	1:00 p.m.	**Lunch**
1:00 p.m.	-	1:20 p.m.	**The Reliability of the Forensic Document Examiner (FDE) in the Identification of Hand Printing: A Blind Study** *Linda L. Mitchell, BS*
1:20 p.m.	-	1:40 p.m.	**The Frequency of Selected Hand Printing Characteristics Occurring Within a National Population: *The New International Version Bible Across America*** *Brett Bishop*
1:40 p.m.	-	2:40 p.m.	**Hands-On Problems—Part 1** *Linton Mohammed, PhD; Lloyd Cunningham*
2:40 p.m.	-	3:25 p.m.	**Hands-On Problems—Part 2** *Linton Mohammed, PhD; Lloyd Cunningham*
3:25 p.m.	-	3:45 p.m.	**Break**
3:45 p.m.	-	4:45 p.m.	**Hands-On Problems—Part 3** *Linton Mohammed, PhD; Lloyd Cunningham*
4:45 p.m.	-	5:00 p.m.	**Questions and Answers** *Linton Mohammed, PhD; Lloyd Cunningham*

Pre-Registration was required.

W24 Forensic Postmortem Radiology: Crossing the Border Between Radiology and Pathology

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **7.0 CE Hours**

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 investigations, and (4) finally will be made aware of potential resources available to interested practitioners.

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

Chair:
Summer J. Decker, PhD
University of South Florida Department of Radiology
Morsani College of Medicine
Tampa, FL

Co-Chair:
Edward Mazuchowski II, MD, PhD
Joint Trauma System
Joint Base San Antonio-Fort Sam Houston, TX

Faculty:
Natalie L. Adolphi, PhD
McCormick Lab
Albuquerque, NM

Rachael M. Carew, MSc
University College London
UCL Security & Crime Science
London, UNITED KINGDOM

Lars C. Ebert, PhD
Universitat Zurich
Zurich, SWITZERLAND

Jonathan M. Ford, PhD
Department of Radiology
Tampa, FL

Frances E. Hollingbury, MBChB
East Midlands Forensic Pathology Unit
Leicester, UNITED KINGDOM

Jeroen J.F. Kroll
Maastricht University Medical Center
Maastricht, NETHERLANDS

Chris O'Donnell, MD
Victorian Institute for Forensic Medicine
Melbourne, AUSTRALIA

Lars Oesterhelweg
Institut für Rechtsmedizin der Charité
Berlin, GERMANY

Michael Thali, MD
Universitat Zurich
Zurich, SWITZERLAND

Rick R. Van Rijn, MD, PhD
Amsterdam UMC & Netherlands Forensic Institute
Amsterdam, NETHERLANDS

Targeted Audience: Pathology/Biology

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 150 Pages

Pre-Registration was required.

W24 Forensic Postmortem Radiology: Crossing the Border Between Radiology and Pathology

Program Description: The "Virtual Autopsy" or "Virtopsy" utilizes Multislice Computed Tomography (MSCT) or Postmortem CT (PMCT) and Magnetic Resonance Imaging (MRI) combined with 3D imaging technology to create vivid images of the interior of the human body. This can be accomplished not only in the living but also in the dead. In the past decades, an increasing use of these techniques, in the postmortem setting, has been seen in the field of forensics. However, without the proper knowledge of the potential benefits but also the limitations of forensic postmortem radiology, its implementation in the field of forensics is impossible. The international group of speakers in this workshop have extensive experience in implementing forensic postmortem radiology workflows, interpreting case studies, and/or implementing this in advanced imaging modalities. The international background and diversity of professional backgrounds of the speakers provides the participants an opportunity to gain a broad perspective, crossing the borders between specialties, on this exciting field. Many of the speakers, who all are internationally seen as experts in their fields, have been on the forefront of forensic postmortem radiology or can even be seen as founding fathers in this field.

The goal of this workshop is to share knowledge and experiences with those who are working in the field of forensics and are currently thinking about implementing this new and important modality; they should really attend this course. Those who already are using forensic postmortem radiology are also welcome, not only to learn from this highly experienced faculty, but also to share their experiences in this field. This program offers a broad range of topics from the young child to disaster victim identification and from obtaining data to advanced 3D visualization.

At the end of the sessions, there will be an interactive case session in which the audience is asked to participate. During these sessions, cases will be presented showing the potential and limitations of forensic postmortem radiology.

Program:

8:30 a.m.	-	9:00 a.m.	**Introductions, Background, and a Historical Overview** *Michael Thali, MD*
9:00 a.m.	-	9:30 a.m.	**Acquiring PMCT Scan Tips and Tricks: A Technician's Perspective** *Jeroen J.F. Kroll*
9:30 a.m.	-	10:00 a.m.	**The Development of a Forensic CT Service in a High-Volume U.S. Medical Examiner Office** *Natalie L. Adolphi, PhD*
10:00 a.m.	-	10:30 a.m.	**PMCT Status in Australia: An International Perspective** *Chris O'Donnell, MD*
10:30 a.m.	-	10:45 a.m.	**Break**
10:45 a.m.	-	11:30 a.m.	**Directed PMCT Angiography and an Evaluation of Resuscitative Medical Therapy** *Edward Mazuchowski II, MD, PhD*
11:30 a.m.	-	12:00 p.m.	**Forensic PMCT in Children: Application and Limitations** *Rick R. Van Rijn, PhD*
12:00 p.m.	-	12:30 p.m.	**Interactive Cases I** *Jeroen J.F. Kroll; Rick R. Van Rijn, PhD*
12:30 p.m.	-	1:30 p.m.	**Lunch**

Pre-Registration was required.

W24 Forensic Postmortem Radiology: Crossing the Border Between Radiology and Pathology

Program cont.:

1:30 p.m.	-	2:00 p.m.	**PMCT in Gunshot Wound (GSW) and Fatal Penetrating Trauma** *Lars Oesterhelweg*
2:00 p.m.	-	2:30 p.m.	**PMCT in Disaster Victim Identification** *Frances E. Hollingbury, MBChB*
2:30 p.m.	-	3:05 p.m.	**3D Visualization in Forensic Postmortem Radiology: Possibilities and Examples** *Summer J. Decker, PhD*
3:05 p.m.	-	3:20 p.m.	**Break**
3:20 p.m.	-	3:50 p.m.	**Virtual Crime Scenes: Digital Evidence Documentation and Courtroom Use** *Rachael M. Carew, MSc*
3:50 p.m.	-	4:30 p.m.	**Emerging Technologies** *Lars C. Ebert, PhD; Jonathan M. Ford, PhD*
4:30 p.m.	-	5:00 p.m.	**Interactive Cases II** *Summer J. Decker, PhD; Lars C. Ebert, PhD; David Errickson, PhD; Jonathan M. Ford, PhD*

Pre-Registration was required.

W25 Working Toward a Wellness Mindset for Forensic and Investigative Personnel: Addressing Stress and Trauma in the Workforce and Taking Steps to Change Agency and Professional Culture

Tuesday

February 18, 2020 **8:30 a.m. – 5:00 p.m.** **6.5 CE Hours**

Learning Overview: After attending this workshop, attendees will understand and recognize how stress and trauma are tied to the forensic professions, including in the form of vicarious trauma, and how exposure to trauma and stress impacts an employee's personal and professional performance. Attendees will also learn evidence-based strategies to mitigate and reduce the impacts of stress and trauma, as well as learn from the experience of the anthropology program at the University of South Florida and the Maryland State Police's Crime Laboratory efforts to address stress and trauma. Attendees will be more aware of the various types of trauma that investigators and investigative personnel routinely encounter and the potential impacts this may have, not only on the individual, but on the investigation and/or service provision. This workshop builds upon and expands the content of the half-day workshop presented at the American Academy of Forensic Sciences Annual Scientific Meeting in 2019. Paths forward and the implementation and incorporation of Evidence-Based Policy (EBP) will also be addressed so attendees can examine what policies and assistance are available in their own agencies or assist in policy development. This workshop will address concerns related to both line-level and supervisory personnel.

Impact on the Forensic Science Community: This workshop will impact the forensic science community by providing attendees with the understanding that the human experience is variable, and trauma exposure and symptoms even more so, leading to behavior patterns that can be complex and abstract and by recognizing the manifestations of a variety of psychological—both behavioral and cognitive—impacts as a reaction to trauma and stress exposure on the job. This workshop will also address the concept of trauma-informed agencies, ensuring that appropriate resources are available to employees, focusing on evidence-based interventions. By attending this workshop, attendees will be better equipped to understand the potentially short- and long-term impacts of trauma, as well as how to adapt investigative approaches and provide resources that will lead to increased chances of not only a positive work environment, but likely a more efficient and cost-effective solution to maintaining employee health and well-being to avoid burn-out and decreased cognitive abilities that may impact service provision and job performance.

Chair:
Amanda L. Farrell, PhD
Marymount University
Arlington, VA

Co-Chair:
Jonathan D. Bethard, PhD
University of South Florida
Tampa, FL

Faculty:
Timothy J. Ainger, PhD
University of Kentucky
Lexington, KY

Daniel E. Katz, MFS
Maryland State Police Forensic Sciences Division
Pikesville, MD

Lurena A. Huffman, BS
Houston Forensic Science Center
Houston, TX

Christopher J. Scallon, MS
Norfolk Police Department
Norfolk, VA

Targeted Audience: All Disciplines

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 60 Pages

Pre-Registration was required.

W25 Working Toward a Wellness Mindset for Forensic and Investigative Personnel: Addressing Stress and Trauma in the Workforce and Taking Steps to Change Agency and Professional Culture

Program Description: This workshop will aid attendees in identifying factors associated with these needs and their expression, particularly with regard to identifying "problem behaviors," and detecting the symptoms of post-traumatic exposure, in addition to identifying and implementing empirically supported strategies for proper identification and management of cognitive concerns. Attendees will be exposed to a wide array of behaviors, as well as to how these behaviors can be identified and addressed. Topical discussions will be further supported by case studies and videos.

Program:

8:30 a.m.	-	8:40 a.m.	**Welcome** *Amanda L. Farrell, PhD; Jonathan D. Bethard, PhD; Lurena A. Huffman, BS*
8:40 a.m.	-	9:00 a.m.	**Introduction: Context, Approach, and Panel** *Amanda L. Farrell, PhD*
9:00 a.m.	-	10:00 a.m.	**Stress, Trauma, and Their Impact on Forensic Professionals** *Amanda L. Farrell, PhD; Timothy J. Ainger, PhD; Christopher J. Scallon, MS*
10:00 a.m.	-	10:15 a.m.	**Break**
10:15 a.m.	-	11:00 a.m.	**Cognitive and Long-Term Impacts of Trauma** *Timothy J. Ainger, PhD*
11:00 a.m.	-	11:45 a.m.	**Addressing Vicarious Trauma and Becoming a Trauma-Informed Agency** *Christopher J. Scallon, MS*
11:45 a.m.	-	12:00 p.m.	**Moderated Discussion/Questions and Answers** *Lurena A. Huffman, BS*
12:00 p.m.	-	1:30 p.m.	**Lunch**
1:30 p.m.	-	2:45 p.m.	**Learning From Examples** *Jonathan D. Bethard, PhD; Daniel E. Katz, MFS*
2:45 p.m.	-	3:00 p.m.	**Break**
3:00 p.m.	-	4:30 p.m.	**Evidence-Based Strategies and Interventions** *Amanda L. Farrell, PhD; Timothy J. Ainger, PhD; Christopher J. Scallon, MS*
4:30 p.m.	-	5:00 p.m.	**Moderated Discussion/Questions and Answers** *Lurena A. Huffman, BS*

Pre-Registration was required.

W26 Overcoming Analytical Challenges Inherent in New Psychoactive Substances With Gas Chromatography Coupled With Vapor Phase Infrared Detection (GC-IRD)

Tuesday

February 18, 2020 **1:00 p.m. – 5:00 p.m.** **3.75 CE Hours**

Learning Overview: The goals of this presentation are to obtain: (1) a more comprehensive awareness and understanding of the analytical challenges inherent in the analysis of novel and emerging drugs; (2) an overview and better understanding of the role of GC-IRD applications in the analysis of seized drugs; and (3) knowledge and tools for the optimization of GC-IRD methodology for the analysis of opioids, synthetic cathinones, and synthetic cannabinoids.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by informing attendees that GC-IRD is a useful alternative for the rapid detection and identification of novel substances when routine analytical techniques yield limited information.

Chair:
Agnes D. Winokur, MS
Drug Enforcement Administration/Southeast Laboratory
Miami, FL

Co-Chair:
Reta Newman, MA
Pinellas County Forensic Lab
Largo, FL

Faculty:
Jose R. Almirall, PhD
Florida International University
Department of Chemistry
Miami, FL

Randall Clark, PhD
Auburn University
School of Pharmacy
Auburn, AL

Targeted Audience: Criminalistics, General

Knowledge Level Required: Basic (little to no knowledge of subject presented)

Expected Handout Length: 50 Pages

Program Description: This program will be broken down into three main sections. Section 1 will address the struggles that forensic scientists are experiencing in their ability to detect and identify new psychoactive substances. Section 2 will focus on the theory and on demonstrating how the role of GC-IRD methodologies are increasing the capabilities of forensic laboratories. The last section will illustrate how GC-IRD applications and modern technological advances can facilitate the rapid analysis of opioids, synthetic cathinones, and synthetic cannabinoids.

Pre-Registration was required.

W26 Overcoming Analytical Challenges Inherent in New Psychoactive Substances With Gas Chromatography Coupled With Vapor Phase Infrared Detection (GC-IRD)

Program:

1:00 p.m.	-	1:05 p.m.	**Introductions** *Agnes D. Winokur, MS*
1:05 p.m.	-	1:25 p.m.	**An Overview of GC/IR** *Reta Newman, MA*
1:25 p.m.	-	1:50 p.m.	**Struggles in the Detection and Identification of New Psychoactive Substances** *Agnes D. Winokur, MS*
1:50 p.m.	-	2:05 p.m.	**An Introduction to Isomerism in Synthetic Drugs** *Randall Clark, PhD*
2:05 p.m.	-	2:30 p.m.	**Case Studies: Synthetic Cathinones and Cannabinoids** *Reta Newman, MA*
2:30 p.m.	-	2:45 p.m.	**Break**
2:45 p.m.	-	3:35 p.m.	**A Comparison of Electron Ionization/Mass Spectrometry (EI/MS) and Vapor Phase IR in Cannabinoids, Cathinones, and NBOMe Drugs** *Randall Clark, PhD*
3:35 p.m.	-	4:00 p.m.	**Differentiation of Fentanyl Analogs Using GC-IRD** *Agnes D. Winokur, MS*
4:00 p.m.	-	4:25 p.m.	**Fentanyl Database** *Jose R. Almirall, PhD*
4:25 p.m.	-	4:45 p.m.	**Planning and Coordination of Inter-Laboratory Studies to Reach Consensus-Based Standards** *Jose R. Almirall, PhD*
4:45 p.m.	-	5:00 p.m.	**Questions and Answers** *Agnes D. Winokur, MS; Reta Newman, MA; Randall Clark, PhD*

AMERICAN SOCIETY OF FORENSIC ODONTOLOGY

50th Annual Scientific Session

Registration for this session can be found at www.ASFO.org

Tuesday

February 18, 2020 **7:00 a.m. – 5:15 p.m.**

Program:

7:00 a.m.	-	8:00 a.m.	**Registration & Continental Breakfast**
8:00 a.m.	-	8:10 a.m.	**Welcome** *Robin A. Ainsworth, DDS, President, American Society of Forensic Odontology*
8:10 a.m.	-	8:20 a.m.	**Program Introduction: Morning Session 2018 Camp Fire** *Richard H. Fixott, DDS, President-Elect, American Society of Forensic Odontology*
			Morning Session—The Camp Fire
8:20 a.m.	-	9:15 a.m.	**Camp Fire—Responders** *David Krusslow*
9:15 a.m.	-	10:15 a.m.	**Camp Fire—Forensic Anthropology and the Recovery of Human Remains** *Colleen F. Milligan, PhD; Ashley E. Kendell, PhD; P. Willey, PhD; Eric J. Bartelink, PhD*
10:15 a.m.	-	10:30 a.m.	**Break**
10:30 a.m.	-	11:05 a.m.	**Camp Fire—Dental Response** *Mark D. Porco, DDS*
11:05 a.m.	-	12:00 p.m.	**Camp Fire—Human Response and Community Recovery** *American Red Cross Representative*
12:00 p.m.	-	1:30 p.m.	**Lunch and Annual Business Meeting**
			Afternoon Session—Forensic Odontology Casework: Presentations and Applications
1:30 p.m.	-	2:45 p.m.	**Applied Anthropology—Sex and Gender From Skull Traits** *Joe Adserias-Garriga, DDS, PhD*
2:45 p.m.	-	3:30 p.m.	**Applied Dental Age Assessment** *Derek M. Draft, DDS*
3:30 p.m.	-	3:45 p.m.	**Break**
3:45 p.m.	-	4:35 p.m.	**Identification and Beyond—You Make the Call** *Raymond G. Miller, DDS*
4:35 p.m.	-	5:15 p.m.	**Furst Word Society—Lessons Learned** *Jan Westberry, DMD; Armin A. Farid, DMD; Mark L. Bernstein, DDS; Amber D. Riley, MS; Richard H. Fixott, DDS*

NATIONAL INSTITUTE OF JUSTICE

Forensic Science Research and Development (R&D) Symposium

American Academy of Forensic Sciences 72nd Annual Scientific Meeting

Pre-Registration Not Required — Open to All Meeting Attendees

Tuesday

February 18, 2020 **8:30 a.m. – 5:10 p.m.**

The National Institute of Justice (NIJ) Forensic Science R&D Symposium is an open meeting where attendees can learn about NIJ-funded research across a variety of forensic science areas. AAFS meeting registration is not necessary. Feel free to stop by and listen to specific presentations or stay all day and learn about the diverse NIJ forensic science R&D portfolio.

Information will be available at www.forensicCOE.org.

Program:

8:30 a.m.	-	8:40 a.m.	**Welcome and Opening Remarks**
			Morning Session I – Forensic Biology/DNA *Moderator: Andrea M. Borchardt, MS*
8:40 a.m.	-	9:05 a.m.	**Efficient Sequencing and Analysis of Degraded and Trace DNA Samples Using a Novel Targeted Ligation-Free Method (2017-DN-BX-0140)** *Jannine Forst*
9:05 a.m.	-	9:30 a.m.	**Microhaplotypes: Moving Scientific Research to a Forensic Casework Panel (2018-75-CX-0041)** *Kenneth Kidd, PhD*
9:30 a.m.	-	9:55 a.m.	**DNA Typing Strategies Via Real-Time Nanopore Sequencing for Forensic Analyses (2018-DU-BX-0179)** *Courtney L. Hall, BS*
9:55 a.m.	-	10:20 a.m.	**The Development of Entire Mitogenome Reference Data Using an Automated High Throughput Sequencing Workflow (DJO-NIJ-17-RO-0219)** *Kimberly S. Andreaggi, MFS*
10:20 a.m.	-	10:35 a.m.	**Break**
			Morning Session II – Controlled Substances and Toxicology *Moderator: Frances Scott, PhD*
10:35 a.m.	-	11:00 a.m.	**The Detection and Quantitation of Fentanyl Mixtures by Surface-Enhanced Raman Spectroscopy (SERS) and Chemometrics (2015-IJ-CX-K006)** *Ling Wang, MS*
11:00 a.m.	-	11:25 a.m.	**A Portable Surface-Enhanced Raman Spectroscopy-Paper Spray Ionization-Mass Spectrometry (SERS-PSI-MS) Dual Analysis Platform Using Gold Nanoparticle-Embedded Paper for Trace Detection of Illegal Drugs (2017-R2-CX-0022)** *Jeremy Driskell*
11:25 a.m.	-	11:50 a.m.	**Forty-Plus Ways Not to Analyze Beverages for Cannabinoids (2017-R2-CX-0029)** *Carl E. Wolf II, PhD*

Forensic Science Research and Development Symposium

Pre-Registration Not Required — Open to All Meeting Attendees

Program cont.:

11:50 a.m.	-	12:15 p.m.	**Investigating the Rise and Fall of Opioids Using Data Acquired by Liquid Chromatography/Time of Flight/Mass Spectrometry (2017-DN-BX-0169)** *Judith Rodriguez Salas, MS*
12:15 p.m.	-	1:35 p.m.	**Lunch**
			Afternoon Session I –Impression and Pattern Evidence/Trace Evidence *Moderator: Gregory Dutton, PhD*
1:35 p.m.	-	2:00 p.m.	**Quantitative Measures for Footwear Impression Comparisons (DJO-NIJ-17-RO-0202)** *Steven P. Lund, PhD*
2:00 p.m.	-	2:25 p.m.	**Testing the Accuracy and Reliability of Palmar Friction Ridge Comparisons: A Black Box Study (2017-DN-BX-0170)** *Heidi Eldridge, MS*
2:25 p.m.	-	2:50 p.m.	**Rapid Detection of Inorganic and Organic Firearm Discharge Residues by Laser-Induced Breakdown Spectroscopy and Electrochemical Sensors (2018-DU-BX-0186)** *Tatiana Trejos, PhD; Luis E. Arroyo PhD*
2:50 p.m.	-	3:15 p.m.	**Facilitating the Adoption of Glass Evidence Analyses in Forensic Laboratories (2015-DN-BX-K049)** *Jose R. Almirall, PhD*
3:15 p.m.	-	3:30 p.m.	**Break**
			Afternoon Session II – Forensic Anthropology and Forensic Pathology *Moderator: Danielle L. McLeod-Henning, MFS*
3:30 p.m.	-	3:55 p.m.	**Developing an Online Resource for Species Identification of Skeletal Remains (2018-DU-BX-0229)** *Heather M. Garvin, PhD*
3:55 p.m.	-	4:20 p.m.	**Development Responses to Fluctuating Temperatures of a Forensically Important Blow Fly (*Cochliomyia Macellaria*) (2016-DN-BX-0204)** *Travis Rusch*
4:20 p.m.	-	4:45 p.m.	**Understanding the Role of the Thanatomicrobiota in the Decay of "Reproductive Organs" in Human Decomposition (2017-MU-MU-0042)** *Gulnaz T. Javan, PhD*
4:45 p.m.	-	5:10 p.m.	**Using Microbiome Tools to Estimate the Postmortem Interval of Human Remains (2015-DN-BX-K016)** *Jessica L. Metcalf, PhD*

NATIONAL ASSOCIATION OF MEDICAL EXAMINERS

2020 Interim Scientific Program

Mass Fatality: Planning and Management

Tuesday

February 18, 2020 **1:00 p.m. – 5:00 p.m.**

This program will include a multidisciplinary panel discussion relative to mass fatality planning and management.

Program:

1:00 p.m.	-	1:05 p.m.	**Welcome and Introduction** *Sally S. Aiken, MD, President, National Association of Medical Examiners*
1:05 p.m.	-	1:10 p.m.	**Opening Remarks** *Suzanne R. Utley, MDL*
1:10 p.m.	-	1:40 p.m.	**National Missing and Unidentified Persons System (NamUs) for Critical Incidents** *Emily A. Craig, PhD*
1:40 p.m.	-	2:10 p.m.	**Calling an Audible: Continuity of Operations Planning (COOP) and Mass Fatality Incident (MFI) Planning** *Shawn Wilson*
2:10 p.m.	-	2:40 p.m.	**Mass Fatality Management—Preparation for a Complex Coordinated Attack (CCA)** *Roger A. Mitchell, Jr.*
2:40 p.m.	-	2:50 p.m.	**Break**
2:50 p.m.	-	3:20 p.m.	**Planning, Partnerships, and Preparing for the Unexpected** *Melanie Rouse, MS*
3:20 p.m.	-	3:50 p.m.	**Flight 3407: A Commercial Airline Crash in Western New York** *Katherine F. Maloney, MD*
3:50 p.m.	-	4:20 p.m.	**Mass Fatality Preparedness—Lessons Learned From the October 1, 2017, Shooting in Las Vegas** *John Fudenberg, MBA*
4:20 p.m.	-	5:00 p.m.	**Mass Fatality Planning and Aftermath: Panel Discussion** *Sally S. Aiken, MD; Suzanne R. Utley, MD; Emily A. Craig, PhD; Shawn Wilson; Roger A. Mitchell, Jr.; Melanie Rouse, MS; Katherine F. Maloney, MD; John Fudenberg, MBA*

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of MedChi, The Maryland State Medical Society, and the National Association of Medical Examiners. MedChi is accredited by the ACCME to provide continuing medical education for physicians. MedChi designates this live activity for a maximum of 3.5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Continuing Education Administration Fee: There is an administrative charge ($75 pre-registration, $100 at the door registration) for persons wishing to receive this credit. It will be necessary for you to complete a program evaluation as well as pay the administrative fee to receive CME credit for this meeting.

Self-Assessment Module: The American Board of Pathology has deemed the National Association of Medical Examiners to be an approved provider of Self-Assessment Modules (SAMs) for the Life-Long Learning and Self-Assessment Requirement (Part II) for Maintenance of Certification in Forensic Pathology. This activity has been planned and implemented in accordance with those guidelines and qualify for a maximum of 3.5 hours of SAMs. There is an administrative charge of $35 for Members and $105 for Non-Members.

Registration Fee: There is a registration fee of $150 for Members, $200 at the door and $200 for Non-Members, $250 at the door. Registrations are totally separate from the AAFS. Contact Denise McNally at 660-734-1891 or email name@thename.org to receive a registration form.

HUMANITARIAN AND HUMAN RIGHTS RESOURCE CENTER

Poster Session

American Academy of Forensic Sciences 72nd Annual Scientific Meeting

Pre-Registration Not Required — Open to All Meeting Attendees

Tuesday

February 18, 2020 **6:00 p.m. – 8:00 p.m.**

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 meet our HHRRC researchers and learn about the application of forensic science to investigate humanitarian and human rights injustices.

Information will be available at www.forensicCOE.org.

Moderator:
Douglas H. Ubelaker, PhD
Smithsonian National Museum of Natural History
Washington, DC

Co-Moderator:
Jeri D. Ropero-Miller, PhD
RTI International
Research Triangle Park, NC

Program:

6:00 p.m.	-	8:00 p.m.	**Urban Scavenging of Skeletal Remains by the Slender Mongoose (*Galerella Sanguinea*) in Johannesburg, South Africa** *Craig A. Keyes, MS; Jolandie Myburgh, MSc; Desiré Brits, PhD*
6:00 p.m.	-	8:00 p.m.	**Application of Stable Isotopes for Geolocating Unidentified Border Crossers From the Texas-Mexico Border** *Eric J. Bartelink, PhD; Sarah A. Hall, MA; Samuel A. Mijal, BS; Vanessa C. Reeves, BA; Alina Tichinin*
6:00 p.m.	-	8:00 p.m.	**Building Forensic Capacity in Post-Conflict Uganda** *Hugh H. Tuller, MA; Paul D. Emanovsky, PhD; Jaymelee Kim, PhD; Dawnie W. Steadman, PhD*
6:00 p.m.	-	8:00 p.m.	**Scene Documentation for Human Rights Investigators** *Tal Simmons, PhD; Scott Edwards, PhD*
6:00 p.m.	-	8:00 p.m.	**Humanitarian Forensic Action for Resolving and Preventing the Missing** *Morris V. Tidball-Binz, MD*
6:00 p.m.	-	8:00 p.m.	**Strategies for the Identification of Migrants in the Mediterranean: The Shipwreck of April 18, 2015** *Cristina Cattaneo, PhD; Debora Mazzarelli, BS; Giulia Caccia, BSc; Danilo De Angelis, DDS; Annalisa Cappella, PhD; Pasquale Poppa, BS; Douglas H. Ubelaker, PhD; Luca Sconfienza, MD; Zuzana Obertova, PhD; Richard Jantz, PhD; Stephen D. Ousley, PhD; Laura Manthey, MD; Tony Fracasso, MD, PhD; Lucie Biehler-Gomez; Barbara Bertoglio, BSc; Carlo Previderé, PhD; Morris V. Tidball-Binz, MD; José P. Baraybar, MSc, PhD; Oran Finegan, MSc; Rossella Di Liberto; Federica Giannotta; Giuliana Perrotta, MA*

Poster Session

Pre-Registration Not Required — Open to All Meeting Attendees

Program cont.:

6:00 p.m.	-	8:00 p.m.	**Using Environmental and Archaeological Samples to Build Forensic Isoscapes of the Peruvian Andes: Paths Forward for Identifying Victims From the Time of Violence in Peru (1980–1990s)** *Beth K. Scaffidi, PhD; Gwyneth W. Gordon, PhD; Roberto C. Parra, MA; Kelly Knudson, PhD; Martha R. Palma Malaga, MG; Tiffiny A. Tung, PhD*
6:00 p.m.	-	8:00 p.m.	**Isotopes and Isoscapes: Their Potential and Limitations in Aiding the Identification Process of Uundocumented Border Crossers From Mexico** *Saskia Ammer, MSc*
6:00 p.m.	-	8:00 p.m.	**A Protocol Validation of Qualitative and Quantitative Methods and Its Application in Forensic Anthropology: A Pilot Study** *Cláudia Regina Plens, PhD*
6:00 p.m.	-	8:00 p.m.	**The Humanitarian and Human Rights Crisis in South Texas Exemplified Through the Tres Norias Cemetery** *Kate Spradley, PhD; Timothy P. Gocha, PhD; Chloe P. McDaneld, MA; Courtney C. Siegert, MA*
6:00 p.m.	-	8:00 p.m.	**The Detection of Chemical Weapon Nerve Agents in Bone: Expanding the Post-Incident Interval for Verifying Nerve Agent Exposure Using Biomatrices** *Katie M. Rubin, PhD; Bruce A. Goldberger, PhD*

NOTE: *Additional posters on humanitarian and human rights will be invited to exhibit during the session.*

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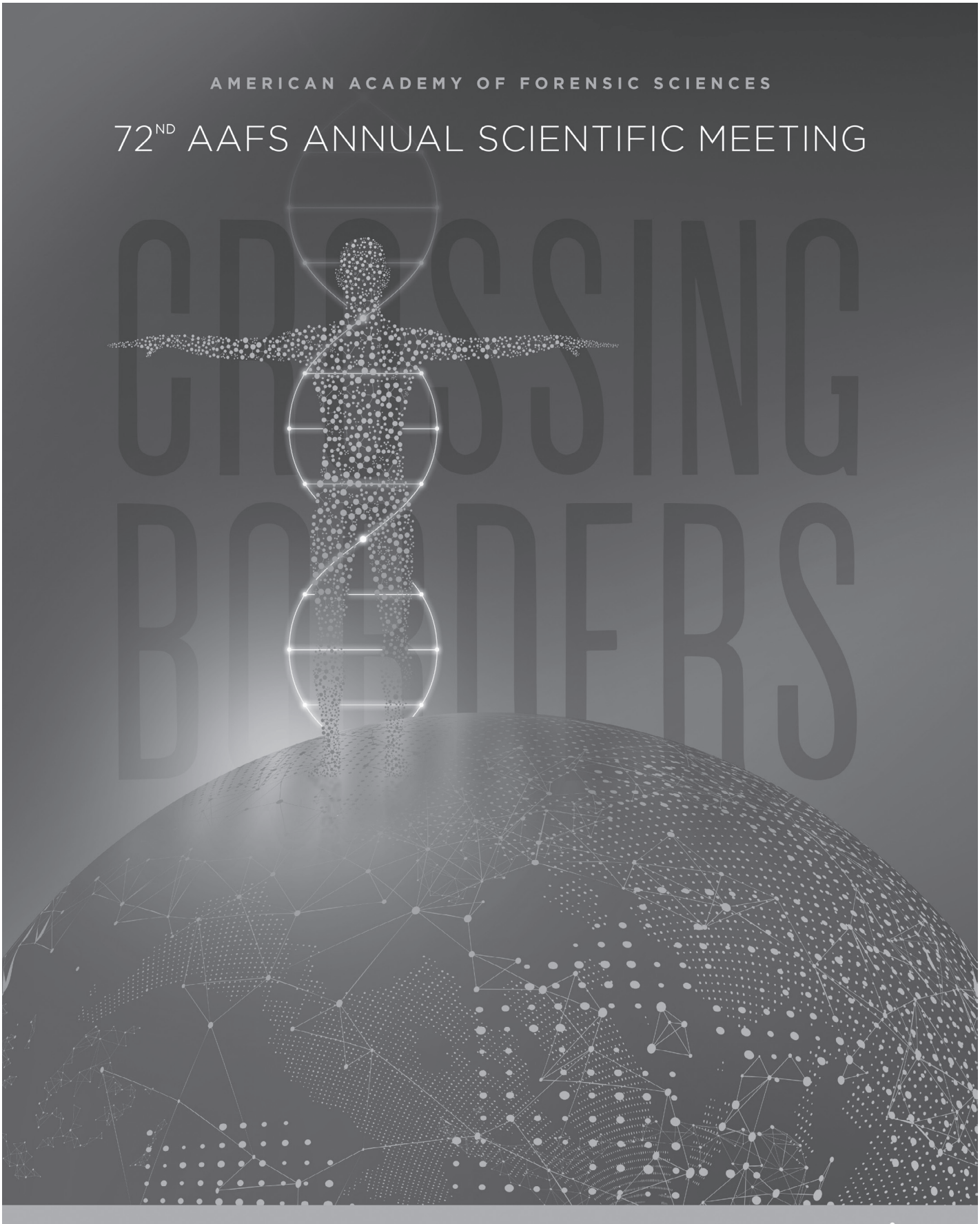
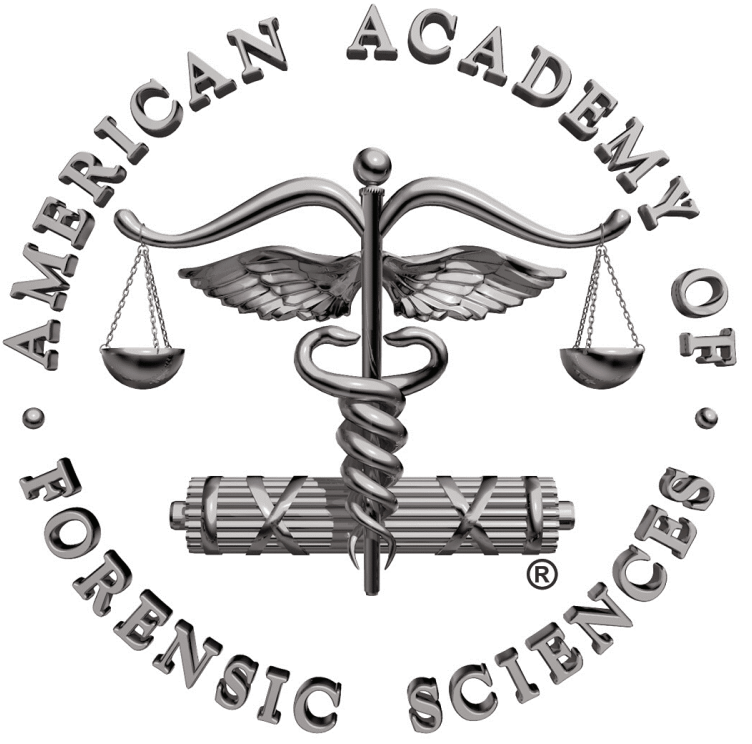
AMERICAN ACADEMY OF FORENSIC SCIENCES

72ND AAFS ANNUAL SCIENTIFIC MEETING



Scientific Sessions

Due to potential changes in the program, the AAFS encourages you to access the most up-to-date schedule on the AAFS website at www.aafs.org.



Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**A1**	**Collaborative Approaches in the Identification of Transgender and Gender Variant Decedents** *Amy Michael, PhD*; Mariyam I. Isa, MA*; Lee Redgrave; Anthony Redgrave, MS*
11:30 a.m.	-	1:00 p.m.	**A2**	**The Frontal Versus Basal Region of the Cranium: A Comparison of the Best Sex Prediction Parameters Using Discriminant Function Analysis** *Preetika M. Chatterjee, PhD; Kewal Krishan, PhD**
11:30 a.m.	-	1:00 p.m.	**A3**	**Sex Determination Through the Evaluation of Foramen Magnum Measurements on an Italian Population** *Carmelinda Angrisani, MD*; Federica Mele, MD; Roberto Maselli; Francesco Introna, MD; Antonio De Donno, PhD*
11:30 a.m.	-	1:00 p.m.	**A4**	**Assessing the Utility of Vertebral Body Heights as a Sex Indicator in United States Whites and Koreans** *Yangseung Jeong, PhD*; Eun Jin Woo; Simon Pergande; Omar Aly*
11:30 a.m.	-	1:00 p.m.	**A5**	**Estimation of Sex Based on Postcranial Elements in North American and Latin American Populations** *Sara C. Zapico, PhD*; Joe Adserias-Garriga, DDS, PhD**
11:30 a.m.	-	1:00 p.m.	**A6**	**Evaluating Sexual Dimorphism Among South African Groups Using Dentition** *Goodness P. Shakoane, BS; Ericka N. L'Abbe, PhD*; Marie Christine Dussault, PhD*
11:30 a.m.	-	1:00 p.m.	**A7**	**The Relationship Between Soft Tissue Anatomy and Skeletal Sexual Dimorphism in the Cranium and Clavicle** *Jade S. De La Paz, MS*; Stephanie Woodley, PhD; Nawaporn Techataweewan, PhD; Hallie Buckley, PhD; Siân Halcrow, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**A8**	**Sexual Dimorphism in the Shape of the Auricular Surface of the Ilium** *Madeline Parker, MS*; Stephen P. Nawrocki, PhD; Krista E. Latham, PhD*
11:30 a.m.	-	1:00 p.m.	**A9**	**Application and Evaluation of Adult Morphological Sex Traits Using the Subadult Innominate** *Stephanie J. Cole, MS*; Kyra E. Stull, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**A10**	**Sex Estimation of the Subadult Pelvis Prior to Acetabular Fusion** *Heather M. Garvin, PhD*; Katherine A. Marciniec, BS; Laura E. Cirillo, MA; Michala K. Stock, PhD; Kyra E. Stull, PhD*
11:30 a.m.	-	1:00 p.m.	**A11**	**3D Models of Paranasal Sinuses to Establish Age, Sex, and Ethnicity Across Three Modern Populations** *Madeline H. Robles, MS, MRes*; Ruth M. Morgan, PhD; Carolyn Rando, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*

11:30 a.m. - 1:00 p.m. **A12** **Assessing the Accuracy of Current Ancestry and Sex Estimation Methods on a Japanese Sample**
Cassie E. Skipper, MA; Marin A. Pilloud, PhD*

11:30 a.m. - 1:00 p.m. **A13** **Crossing the Borders of Linguistics, Ancestry, and Race in the Field of Forensic Anthropology**
Alba E. Craig, BA; Krista E. Latham, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A14** **The Use of Eye Tracking Technology in Forensic Anthropology: An Empirical Approach to Advancing the Understanding of Complex Visual Tasks in Cranial Macromorphoscopic Trait Evaluations**
Sherry Nakhaeizadeh; Micayla C. Spiros, MS; Joseph T. Hefner, PhD; Tim Thompson, PhD; Ruth M. Morgan, PhD*

11:30 a.m. - 1:00 p.m. **A15** **Eye Tracking to Assess Decision-Making in Cranial Macromorphoscopic (MMS) Trait Evaluation: Implications of Education and Training in Method Application**
Micayla C. Spiros, MS; Sherry Nakhaeizadeh; Ruth M. Morgan, PhD; Tim Thompson, PhD; Joseph T. Hefner, PhD*

11:30 a.m. - 1:00 p.m. **A16** **Metric and Non-Metric Ancestry Evaluation Analysis of the Craniofacial Region in Greek-Cypriots: A Pilot Study**
Madyson R. Stephenson; Anna S. La Valley, MS; Xenia P. Kyriakou, MA*

11:30 a.m. - 1:00 p.m. **A17** **Craniofacial Modularity and Integration: Implications for Ancestry Assessment**
Janet E. Finlayson, MA; Michala K. Stock, PhD*

11:30 a.m. - 1:00 p.m. **A18** **Re-Evaluating Skeletal Ancestry Traits Using Three-Dimensional Technology**
Elisabeth Cuerrier-Richer, MSc; Tracy Rogers, PhD*

11:30 a.m. - 1:00 p.m. **A19** **A Comparison of Two Data Collection Methods for the (hu)MANid Program on a Diverse Sample of Mandibles**
Paige A. Lynch, MS; Luis L. Cabo, MS*

11:30 a.m. - 1:00 p.m. **A20** **Craniometric Variation and FORDISC® Misclassification in Latin American and Asian Individuals**
Miriam Rangel, BS; Kanya Godde, PhD**

11:30 a.m. - 1:00 p.m. **A21** **Geographic Origin Estimation of Latin American Individuals Using Craniometric Data**
Kari Helgeson, MA; Kate Spradley, PhD*

11:30 a.m. - 1:00 p.m. **A22** **The Impact of Error in Femur Subtrochanteric Measurements on the Assessment of Population Affinity**
Briana T. New, MA; Emily S. Silverman, MA; Sabrina C. Ta'ala, MA*

11:30 a.m. - 1:00 p.m. **A23** **Odontometric Variation of Male Skeletal Samples From the United States and South Africa**
Dori E. Kenessey, BA; Tatiana Vlemincq-Mendieta, MS; G. Richard Scott, PhD; Marin A. Pilloud, PhD*

11:30 a.m. - 1:00 p.m. **A24** **Influence of Ancestry on Sexual Dimorphism in the Human Mandibular Canine**
*Brittney L. Blevins, MA**
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A25** **Human Trafficking: A Challenging Case of Age Assessment**
Greta Cena, MD; Caterina Bosco, MD; Luana Bonaccurso, MD*; Davide Santovito, MD; Sara S. Racalbuto, PsyD; Elena Coppo, MD; Giancarlo Di Vella, MD, PhD**

11:30 a.m. - 1:00 p.m. **A26** **Age-Old Problems: Using the Pars Basilaris to Estimate Age-At-Death in Non-Adult Individuals**
Claire M. Hodson, PhD; Rebecca Gowland, PhD*

11:30 a.m. - 1:00 p.m. **A27** **Why Cranial Sutures Should be Included in Adult Age-At-Death Estimates**
Jessica L. Campbell, PhD; Stephen P. Nawrocki, PhD*

11:30 a.m. - 1:00 p.m. **A28** **A Comparison of Two Dental Age Estimation Methods Using Transition Analysis (TA)**
Kelly R. Kamnikar, MA; Amber M. Plemons, MA; Nicholas P. Herrmann, PhD; Jennifer E. Spence, PhD; Yann Heuzé, PhD; Joseph T. Hefner, PhD*

11:30 a.m. - 1:00 p.m. **A29** **The Ability to Obtain Full DNA Profiles From Nail Clippings After Long-Term Storage at Room Temperature Could Impact the Process of Human Identification**
Jonah W.P. Stone, BS; Krista E. Latham, PhD; Cynthia Cale, MS; Stephen P. Nawrocki, PhD; Gay L. Bush, PhD*

11:30 a.m. - 1:00 p.m. **A30** **The Applicability of Intralimb Indices in the Subadult Biological Profile**
Elaine Y. Chu, MA; Kyra E. Stull, PhD*

11:30 a.m. - 1:00 p.m. **A31** **The Application of Non-Destructive Dental Age Estimation (DAE) Methods Using Root Translucency on Latin American Hispanics**
Melinda V. Rogers, BS; Nicholas P. Herrmann, PhD; Kate Spradley, PhD; James P. Fancher, DDS, PhD*

11:30 a.m. - 1:00 p.m. **A32** **Reevaluating the Use of Percentage of Bone for Histological Age Estimations**
Mariah E. Moe, MA; Timothy P. Gocha, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

Thursday—Session I

Search and Recovery Protocols and Identification of Victims in Wildfires: Multidisciplinary Perspectives

Moderator: *Alison Galloway, PhD*
University of California
Santa Cruz, CA

Co-Moderator: *Angela L. Harden, MA*
The Ohio State University
Columbus, OH

8:30 a.m. - 8:45 a.m. **A33** **An Overview of the Camp Fire and Wildfire Situation in the West**
Colleen F. Milligan, PhD; Ashley E. Kendell, PhD; Alison Galloway, PhD*

8:45 a.m. - 9:00 a.m. **A34** **Butte County's Response to the 2018 California Camp Fire**
*Jennifer Celentano**

9:00 a.m. - 9:15 a.m. **A35** **Search and Recovery Protocols for Fatal Fire Victims of the 2018 California Camp Fire**
Eric J. Bartelink, PhD; Ashley E. Kendell, PhD; Jacqueline L. Galimany, BS; Karen Gardner, MA; Leigh Hayes; Casey A. Hegel, BA; Vanessa C. Reeves, BA; Alyssa Straub, BA; Maura Timmons, BS; Leah Tray, BA*

9:15 a.m.	-	9:30 a.m.	**A36**	**Forensic Pathology, Identification, Morgue Operations, and Management of the Camp Fire Victims** *Kimbelry D. Gin*; Kathy Raven, MD**
9:30 a.m.	-	9:45 a.m.	**A37**	**Wildfire Search, Recovery, and Identification of Victims: Post-Recovery Anthropological Analysis and Identification** *Lauren Zephro, PhD*; James D. Wood, DDS*; Alison Galloway, PhD*
9:45 a.m.	-	10:00 a.m.	**A38**	**Wildfire Search Protocols and Victim Recovery** *Richard Selden, MD*; Rosemary Turingan Witkowski*
10:00 a.m.	-	10:15 a.m.		**Break**
10:15 a.m.	-	10:30 a.m.	**A39**	**Outside Agency Response to the California Camp Fire** *Timothy P. Gocha, PhD*; Kyra E. Stull, PhD*; Marin A. Pilloud, PhD*
10:30 a.m.	-	10:45 a.m.	**A40**	**Demography of the Camp Fire Fatalities** *Samuel A. Mijal, BS*; P. Willey, PhD*
10:45 a.m.	-	11:00 a.m.	**A41**	**Locational Analysis of the Camp Fire Fatalities in Communities and Residences** *Casey A. Hegel, BA*; Samuel A. Mijal, BS*
11:00 a.m.	-	11:15 a.m.	**A42**	**Anthropology and Mass Fatality Management in Wildfire Disasters** *Colleen M. Cheverko, PhD*; Colleen F. Milligan, PhD; Melanie M. Beasley, PhD; Lisa N. Bright, PhD; Shannon J. Clinkinbeard, BA; Leigh Hayes; Jessica Hotaling, BA; Mallory J. Peters, MA; Julia R. Prince-Buitenhuys, MA*
11:15 a.m.	-	11:30 a.m.		**Discussion** *Ashley Kendell, PhD*
11:30 a.m.	-	12:45 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**A43**	**The Infant Injury Database** *Miriam E. Soto Martinez, PhD*; Jason M. Wiersema, PhD; Deborrah C. Pinto, PhD; Julie M. Fleischman, PhD; Christian Crowder, PhD; Jennifer C. Love, PhD; Sharon M. Derrick, PhD; Christopher S. Greeley, MD; Marcella Donaruma-Kwoh, MD; Angela Bachim, MD*
11:30 a.m.	-	1:00 p.m.	**A44**	**Pediatric Posterior Rib Terminus Defects: An Investigation of a Potential Mimic of Traumatic Injury** *Jason M. Wiersema, PhD*; Miriam E. Soto Martinez, PhD; Deborrah C. Pinto, PhD; Julie M. Fleischman, PhD; Dwayne A. Wolf, MD, PhD; Aubrie M. Sanchez, MS, MPH*
11:30 a.m.	-	1:00 p.m.	**A45**	**Evaluating Bone Fracture Healing and Variability Across Forensic Samples Using an Anabolic/Catabolic Model of Bone Repair** *Donna C. Boyd, PhD**
11:30 a.m.	-	1:00 p.m.	**A46**	**Anthropological Examinations of the Hyoid, Thyroid Cartilage, and Cricoid Cartilage in Cases of Possible Neck Trauma** *Christopher W. Rainwater, MS*; Esther H. Choo, BA*

11:30 a.m. - 1:00 p.m. **A47** **Utilizing Reflectance Transformation Imaging (RTI) for the Analysis of Saw Mark Characteristics on Kerf Walls: A Comparison of Traditional Imaging Techniques**
Britny Martlin; Carolyn Rando, PhD*

11:30 a.m. - 1:00 p.m. **A48** **Micro-Computed Tomography (micro-CT) Analysis of False Starts on Bones After Prolonged Exposure to Fire: An Experimental Study**
Giovanni Cecchetto, MD, PhD; Chiara Giraudo, MD; Ludovico Fava, MD; Chiara Vignotto, MD; Marco Bisceglia, MD; Amalia Lupi, MD; Paolo Fais, PhD; Massimo Montisci, PhD*

11:30 a.m. - 1:00 p.m. **A49** **Dehydration-Induced Quantitative Morphometric Alterations to Sharp Force Trauma on Bones**
Taylor M. Flaherty, BS; Carolyn Rando, PhD; Rebecca Watts, PhD*

11:30 a.m. - 1:00 p.m. **A50** **Fracture Patterns Associated With an Airplane Propeller Strike: A Case From the West Tennessee Regional Forensic Center**
Jenna M.S. Watson, MA; Benjamin J. Figura, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A51** **A Survey of Peri-Mortem Vertebral Trauma in Historic Cases**
Andrea Palmiotto, PhD; Brittany S. Walter, PhD; Larkin F. Kennedy, PhD; Emily R. Streetman, PhD*

11:30 a.m. - 1:00 p.m. **A52** **Prediction of Bullet Type From Cranial Gunshot Trauma**
Elizabeth A. DiGangi, PhD; Tessa Somogyi, MA*; Elizabeth A. Evangelou, MA*; Gary D. James, PhD*

11:30 a.m. - 1:00 p.m. **A53** **Atypical Gunshot Wounds in a Controlled Experiment**
Elizabeth A. Evangelou, MA; Tessa Somogyi, MA*; Kevin E. Sheridan, PhD; Elizabeth A. DiGangi, PhD*

11:30 a.m. - 1:00 p.m. **A54** **Radiographic Evidence of Gunshot Defects in Skeletal Remains: A Preliminary Study**
*Naomi S. Levin, BA**

11:30 a.m. - 1:00 p.m. **A55** **Fracture Pattern of Midface Ballistic Trauma**
Casey File, MS; Deborrah C. Pinto, PhD*; Si Gao, MS; Jason M. Wiersema, PhD; Julie M. Fleischman, PhD; Miriam E. Soto Martinez, PhD*

11:30 a.m. - 1:00 p.m. **A56** **The Effects of Diabetes Mellitus (DM) on Bone Fracture Susceptibility and Repair With Applications to Non-Accidental Forensic Fracture Interpretation**
*Donna C. Boyd, PhD; Sadie R. Friend**

11:30 a.m. - 1:00 p.m. **A57** **The Reliability of Morphoscopic Data From 3D Surface Scans**
*Sarah Schwing, BA, BS**

11:30 a.m. - 1:00 p.m. **A58** **Experimental Assessment of the Surface Quality of 3D Printed Bones for Evaluative Interpretation in Forensic Anthropology Reconstructions**
Rachael M. Carew, MSc; Ruth M. Morgan, PhD; Carolyn Rando, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A59** **Investigating the Impact of Opioid Abuse on Intracortical Porosity and Bone Cellular Density: A Synchrotron-Radiation Micro-Computed Tomography (SRμCT) Approach**
Janna M. Andronowski, PhD; Reed A. Davis, MS; Mary E. Cole, PhD*

11:30 a.m. - 1:00 p.m. **A60** **Oh Deer! Detecting Non-Human Skeletal Remains Using Bone Collagen Fingerprinting**
Dana Austin, PhD; Miranda M. Ehlers, BS**

11:30 a.m. - 1:00 p.m. **A61** **Investigating the Predictive Relationships Between Oxygen and Hydrogen Isotopes in Bottled Water and Human Hair in Mexican Populations**
Chelsey A. Juarez, PhD; Belinda S. Akpa, PhD*

11:30 a.m. - 1:00 p.m. **A62** **An Assessment of How "Predictive" Human Geolocation Models Perform When Compared to a "Known" Geolocated Human Enamel Data-Set**
Momoko Ueda, MA; Lynne S. Bell, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A63** **Subadult Body Mass Estimation From Skeletal Remains: Validation for Femoral Cross-Section Methods in a Contemporary Taiwanese Population**
An-Di Yim, MA, MS; Lyle W. Konigsberg, PhD; Hsiao-Lin Hwa, MD, PhD; Jo-Yu Chen, MD; Hon-Man Liu, MD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A64** **A Comparative Analysis of Nasal Profile Estimation Methods for Facial Reconstruction**
Dong-Ho Eddie Kim, BSc; Hankyu Kim; Deog-Im Kim, PhD; Dae-Kyoon Park, MD, PhD; U-Young Lee, MD, PhD; Yi-suk Kim, MD, PhD*

11:30 a.m. - 1:00 p.m. **A65** **The Application of Morphometric and Morphoscopic Features of the Nose in Facial Reconstruction: A Study on a North Indian Population**
Tej Kaur, MSc; Bahadur Singh, MSc; Kewal Krishan, PhD; Adarsh Kumar, MD*

11:30 a.m. - 1:00 p.m. **A66** **Nose Approximation From Cone-Beam Computed Tomography (CBCT) Using a New Computer-Assisted Method**
Alison F. Ridel, PhD; Fabrice Demeter, PhD; Ericka N. L'Abbe, PhD; Dirk Vandermeulen, PhD; Anna C. Oettle, PhD*

11:30 a.m. - 1:00 p.m. **A67** **The First Recovery and Identification Project of Missing Casualties in the Korean Demilitarized Zone (DMZ)**
Yu Ryang Jang, PhD; Nahyok Im, PhD*

11:30 a.m. - 1:00 p.m. **A68** **Historical and Cultural Complications of Repatriating Forensic "Cases" in the Southeastern United States**
Alice F. Gooding, PhD; Jonathan Eisenstat, MD*

11:30 a.m. - 1:00 p.m. **A69** **Skeletal Preparation Using a Modified Steam Kettle: A Fast, Easy, and Low-Maintenance Method for Processing Human Remains**
Kerianne Armelli, MS; Jered B. Cornelison, PhD; Carolyn V. Isaac, PhD*

11:30 a.m. - 1:00 p.m. **A70** **Salary, Wage Transparency, and Forensic Anthropology**
Nicholas V. Passalacqua, PhD; Elaine Y. Chu, MA; Marin A. Pilloud, PhD*

11:30 a.m. - 1:00 p.m. **A71** **Learning From Our Casework: The Forensic Anthropology Database for Assessing Methods Accuracy (FADAMA)**
Cris E. Hughes, PhD; Chelsey A. Juarez, PhD; Katharine Chapman Pope, MA; Brian F. Spatola, MA*

11:30 a.m. - 1:00 p.m. **A72** **3D Slicer as a Tool for Creating Virtual Bone Models From Computed Tomography (CT) Data: Toward Validating a Step-By-Step Method**
Madeline H. Robles, MS, MRes; Rachael M. Carew, MSc; Ruth M. Morgan, PhD; Carolyn Rando, PhD*

11:30 a.m. - 1:00 p.m. **A73** **Gerdy's Tubercle Shape and Associated Biomechanical Factors**
Hailey Collord-Stalder, BA; Nathan Blair, BS**

11:30 a.m. - 1:00 p.m. **A74** **Fatal Shotgun Trauma to the Cranium With Discrimination Between Manners of Death**
*Samantha W. Coberly, MA**

Issues Surrounding Human Rights and Migration

Moderator: *Krista E. Latham, PhD*
University of Indianapolis
Indianapolis, IN

Co-Moderator: *Brittany S. Walter, PhD*
Defense POW/MIA Accounting Agency
Identification Laboratory
Offutt Air Force Base, NE

12:45 p.m. - 1:00 p.m. **A75** **Comparing Dental Indicators of Developmental Stress in Unidentified Migrant Remains to Narratives From Living Migrants: A Cross-Disciplinary Approach**
Lauren G. Koutlias, MA; Michelle D. Hamilton, PhD; Diana Newberry, MA; Nicholas P. Herrmann, PhD; Kate Spradley, PhD*

1:00 p.m. - 1:15 p.m. **A76** **Impacts of Biosocial Environment on Developmental Plasticity Among Unidentified Presumed Migrant Skeletal Remains Recovered Along the United States-Mexico Border**
Caroline Znachko, MA; Michelle D. Hamilton, PhD; Bruce E. Anderson, PhD; Kate Spradley, PhD; James Watson, PhD*

1:15 p.m. - 1:30 p.m. **A77** **The Use of Paid Informants in Post-Conflict Human Rights Contexts**
Hugh H. Tuller, MA; Popi Chrysostomou, MSc*

1:30 p.m. - 1:45 p.m. **A78** **The Use of an Integrated Multidisciplinary Approach to Resolve Non-Identified Human Skeletal Remains in Cyprus**
Aikaterini Papaioannou, MS; Popi Chrysostomou, MSc; Gulbanu K. Zorba, MS; Mine Balman, MS*

1:45 p.m. - 2:00 p.m. **A79** **What Happens to Unidentified or Unclaimed Human Remains Within the Contexts of Five Asian Medicolegal Systems?**
Sherry C. Fox, PhD; Laurel Clegg, MSc; Lay See Khoo, PhD; Rijen Shrestha, MD; Alex Starkie; Panjai Woharndee, MD, PhD*

2:00 p.m. - 2:15 p.m. **A80** **Antemortem Data Collection in West Africa as Part of the Effort to Identify Deceased Migrants: A Humanitarian Dilemma**
Laurel Clegg, MSc; Carolina Pagnini, MD; Derek C. Benedix, PhD; Ivett Kovari, PhD; Bilal Sablouh, MD; Jose P. Baraybar, MSc, PhD*

2:15 p.m. - 2:30 p.m. **Break**

Diversity and Inclusion Symposium–Humanitarian Concerns in Migration: Conflict, Climate, and Ethics

Moderator: *Martha Nuño Diaz, MA*
University of California, Berkeley
Davis, CA

Co-Moderator: *Davette N. Gadison, MA*
Tulane University
Department of Anthropology
New Orleans, LA

2:30 p.m.	-	2:45 p.m.	**A81**	**Climate, Conflict, and Migration—Applications of Forensic Science to Address Humanitarian Issues in a Growingly Complex Global Environment** *Oran Finegan, MSc*; Pierre M.M. Guyomarc'h, PhD; Davette N. Gadison, MA*
2:45 p.m.	-	3:00 p.m.	**A82**	**Crossing Borders: Conflict Evolution and Climate Change—The Humanitarian Consequences on Human Migration** *Sarah Wagner**
3:00 p.m.	-	3:15 p.m.	**A83**	**Crossing Borders and Conflict: The Complex Circumstances of Those Who Disappear in Armed Conflict and the Simple Duty of Care to Bring Them Home** *Laurel Clegg, MSc*; Derek Congram, PhD**
3:15 p.m.	-	3:30 p.m.	**A84**	**The Role of Civil Society and the State in Transnational Identifications at the United States-Mexico Border** *Kate Spradley, PhD*; Courtney C. Siegert, MA; Mercedes Doretti, MA; Robin C. Reineke, PhD; Eduardo Canales, BS; Christine M. Kovic, PhD*
3:30 p.m.	-	3:45 p.m.	**A85**	**Empathy and the Identification of Missing Migrants** *Cate E. Bird, PhD*; Jason D.P. Bird, PhD; Jose P. Baraybar, MSc, PhD; Derek C. Benedix, PhD*
3:45 p.m.	-	4:00 p.m.	**A86**	**Assembling a Forensics of Structural Violence** *Adam R. Rosenblatt, PhD**
4:00 p.m.	-	4:15 p.m.	**A87**	**Beyond Identification: Structural Vulnerability and the Investigation of Migrant Deaths** *Angela Soler, PhD*; Jared S. Beatrice, PhD; Robin C. Reineke, PhD; Daniel L. Martinez, PhD*
4:15 p.m.	-	4:30 p.m.	A**88**	**Families of the Missing: Forensic Obligations to Families During the Identification Process** *Robin C. Reineke, PhD*; Mirza M. Monterroso, MA; Mercedes Doretti, MA; Carmen E. Osorno Solís; Rachel Daniell, MPhil; Eduardo Canales, BS*
4:30 p.m.	-	4:45 p.m.	**A89**	**Revisiting the Concepts of "Race" and "Ancestry" Regarding Missing Migrants in the United States** *Justin R. Maiers, MS*; Jonathan D. Bethard, PhD; Chaunesey Clemmons, BA* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
4:45 p.m.	-	5:00 p.m.	**A90**	**Policy, Ethics, and the Use of DNA in Migrant Families** *Sara H. Katsanis, MS*; Diana J. Madden, MA; Valedie Oray; Jennifer K. Wagner, JD, PhD*
5:00 p.m.	-	5:15 p.m.	**A91**	**Counting the Uncountable: Certification of Deaths in the Borderlands** *Veena D. Singh, MD**
5:15 p.m.	-	5:30 p.m.		**Discussion** *Adam R. Rosenblatt, PhD*

Thursday—Session II

Taphonomy and Postmortem Interval

Moderator: *Joan A. Bytheway, PhD*
Sam Houston State University
Huntsville, TX

Co-Moderator: *Summer J. Decker, PhD*
University of South Florida
Department of Radiology
Morsani College of Medicine
Tampa, FL

8:30 a.m. - 8:45 a.m. **A92** **The Detection and Characterization of Human Decomposition Products by Infrared Spectroscopy**
Afrin Lopa, MS; Liotta N. Dowdy, MA; David S. Perry, PhD; Timothy Matney, PhD; Linda R. Barrett, PhD; Erin H. Kimmerle, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

8:45 a.m. - 9:00 a.m. **A93** **Geographic Information Software (GIS) Application for Building a Nationally Representative Forensic Taphonomy Database**
Katherine E. Weisensee, PhD; Blake Lytle, MS; Patricia Carbajales, MS; Anne Shillinglaw, BS*

9:00 a.m. - 9:15 a.m. **A94** **Why Hasn't the United Kingdom Got a Human Taphonomy Facility (HTF) Yet?**
Anna Williams, PhD; Chris Rogers, PhD; John P. Cassella, PhD*

9:15 a.m. - 9:30 a.m. **A95** **Changes in the Cadaver Decomposition Island (CDI) and Soil Chemistry: An 18-Month Time Series for Scavenged and Protected Human Cadavers**
Jacqueline A. Aitkenhead-Peterson, PhD; Haeli Kennedy; Jasmine Garcia; Joan A. Bytheway, PhD*

9:30 a.m. - 9:45 a.m. **A96** **The Importance of Taphonomic History When Conducting Histological and Isotopic Analyses on Bone**
Rebecca Reid, MSc; Miranda Jans, PhD; Lesley A. Chesson, MS; Rebecca J. Wilson-Taylor, PhD; Gregory E. Berg, PhD*

9:45 a.m. - 10:00 a.m. **A97** **Prediction of Minimum Postmortem Submersion Interval (PMSImin) Based on Eukaryotic Community Succession on Skeletal Remains Recovered From an Aquatic Environment**
Sala D. Randall, BS; Claire M. Cartozzo, MS; Tal Simmons, PhD; Jenise Swall, PhD; Baneshwar Singh, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:00 a.m. - 10:30 a.m. **Break**

Data-Driven Strategies for Investigating the Deaths of Missing Migrants

Moderator: *Kate Spradley, PhD*
Texas State University
San Marcos, TX

Co-Moderator: *Donovan M. Adams, MS*
University of Nevada, Reno
Reno, NV

10:30 a.m. - 10:45 a.m. **A98** **Quantifying Missing Migrant Antemortem Data and Their Identification Significance**
Mercedes Doretti, MA; Carmen E. Osorno Solís; Karla Hernandez Mares, MA; Laura Eliz Alexa Sevilla Maldonado; Rachel Daniell, MPhil*

10:45 a.m. - 11:00 a.m. **A99** **DNA Identifications of Migrant Remains at the Pima County, Arizona, Office of the Medical Examiner (2000-2019)**
Caitlin C.M. Vogelsberg, PhD; Robin C. Reineke, PhD; Mirza M. Monterroso, MA; Jennifer M. Vollner, PhD; Bruce E. Anderson, PhD*

11:00 a.m. - 11:15 a.m. **A100** **Investigating Unidentified Migrant Remains Across Texas Jurisdictions: An Analysis of Positive Identifications by Operation Identification at Texas State University**
Molly A. Kaplan, BA; Molly Miranker, MA; Kate Spradley, PhD; Courtney C. Siegert, MA; Chloe P. McDaneld, MA*

11:15 a.m. - 11:30 a.m. **A101** **The Application of Geographic Information Systems (GIS) to the Migrant Crisis in South Texas: Modeling Migration in Brooks County, Texas**
Courtney C. Siegert, MA; Sophia Mavroudas, MA; Devora S. Gleiber, MA; Nicholas P. Herrmann, PhD; Kate Spradley, PhD*

11:30 a.m. - 11:45 a.m. **A102** **NamUs Location Data: Cluster Analysis of Migrant Deaths at the Texas-Mexico Border From 1990 to 2017**
Molly Miranker, MA; Alberto Giordano, PhD*

11:45 a.m. - 12:00 p.m. **Discussion**
Dawnie Wolfe Steadman, PhD

12:00 p.m. - 1:00 p.m. **Lunch**

Puerto Rico: Crossing Regional, Discipline, and Cultural Borders to Strengthen a Criminal Justice System

Moderator: *Matthew J. Gamette, MS*
Idaho State Police Forensic Services
Meridian, ID

Co-Moderator: *Katie M. Rubin, PhD*
Defense POW/MIA Accounting Agency
Joint Base Pearl Harbor-Hickam, HI

1:00 p.m. - 1:15 p.m. **A103** **Operational and Leadership Assessment During the Puerto Rico Forensic Science Project: How the American Society of Crime Laboratory Directors (ASCLD) Lab Directors, National Association of Attorneys General (NAAG) and Forensic Scientists Assisted the Puerto Rico Laboratory After Hurricane Maria**
Matthew J. Gamette, MS; Amie Ely, JD**

1:15 p.m. - 1:30 p.m. **A104** **Puerto Rico Forensic Science Project: The Puerto Rico Forensic Services Perspective**
*Matthew J. Gamette, MS**

1:30 p.m. - 1:45 p.m. **A105** **Infrastructure, Organization, and Challenges of the Puerto Rico Medical Examiner System**
*Danny A. Milner, Jr., MD, MSc**

1:45 p.m. - 2:00 p.m. **A106** **Decedent Tracking: A Need for an Accurate Headcount in the Medical Examiner's Office**
*Jennifer C. Love, PhD**

2:00 p.m. - 2:15 p.m. **A107** **Challenges and Lessons Learned From Having an External Expert Step Into the DNA Laboratory**
Ray Wickenheiser, DPS; Mariel Candelario Gorbea, MSFS**

2:15 p.m. - 2:30 p.m. **A108** **The American Board of Forensic Anthropology (ABFA) Response to the Puerto Rico Bureau of Forensic Sciences (BFS): Partnering With the National Association of Attorney's General and the American Society of Crime Laboratory Directors**
Dana Austin, PhD; MariaTeresa A. Tersigni-Tarrant, PhD**

2:30 p.m. - 3:00 p.m. **Discussion**
Amie Ely, JD

3:00 p.m. - 3:15 p.m. **Break**

Crossing Borders: International and Multidisciplinary Applications of Isotope Analysis in Forensic Anthropology

Moderator: *Saskia Ammer, MSc*
Munich, GERMANY

Co-Moderator: *Janet E. Finlayson, MA*
C.A. Pound Human Identification Laboratory
University of Florida
Gainesville, FL

3:15 p.m. - 3:30 p.m. **A109** **Assessing Isotope Data Comparability: An Example From the Application of Isotope Testing to Unidentified Human Remains From Past Conflicts**
Lesley A. Chesson, MS; Amelia J. Edwards, MS; Eric J. Bartelink, PhD; Thuan H. Chau, MS; Gregory E. Berg, PhD*

3:30 p.m. - 3:45 p.m. **A110** **Using Stable Nitrogen Isotope Ratios From Fly Larvae for Postmortem Interval (PMI) Estimation**
Melanie M. Beasley, PhD; Julie Lesnik, PhD; Hayden McKee, MSc; Anielle Duncan, BA; Dawnie W. Steadman, PhD*

3:45 p.m. - 4:00 p.m. **A111** **Crossing Borders: International and Multidisciplinary Applications of Isotope Analysis in Forensic Anthropology**
Gabriela B. Nardoto; Luiz Antonio Martinelli*

4:00 p.m. - 4:15 p.m. **A112** **Isotopic Analyses of New York City's Unidentified Individuals: Differentiating Migrants From Local Residents in a Multicultural Metropolitan Context**
Rhonda L. Quinn; Helen S. Alesbury, MA; Angela Soler, PhD; Ligia E. Ceja, BS; Linda Godfrey, PhD; Jacob B. Setera*

4:15 p.m. - 4:30 p.m. **A113** **Isotope Analysis in Modern Colombian Teeth: A Forensic Application**
Daniel Castellanos, MA; Elizabeth A. DiGangi, PhD; Jonathan D. Bethard, PhD*; George D. Kamenov, PhD*

4:30 p.m. - 4:45 p.m. **A114** **Examining Stable Isotope Ratios From Victims of the Internal Armed Conflict in Peru (1980s-2000) to Establish Local or Non-Local Geographic Origins: A Preliminary Analysis of the Victims of the Military Base Los Cabitos, Ayacucho, Peru**
Tiffiny A. Tung, PhD; Natasha P. Vang, BS; Roberto C. Parra, MA; Martha R. Palma Malaga, MG*

4:45 p.m.	-	5:00 p.m.	**A115**	**Spatial Distributions of Isotope Ratios in Tap Water, Hair, and Teeth From Latin America for Region of Origin Predictions of Unidentified Border Crossers** *Saskia Ammer, MSc*; Eric J. Bartelink, PhD**
5:00 p.m.	-	5:15 p.m.	**A116**	**Considerations for Isotope Analysis of Human Hair: The Impact of Postmortem Environmental Exposure** *Tiffany B. Saul, PhD*; Lesley A. Chesson, MS; Dawnie W. Steadman, PhD; Daniel J. Wescott, PhD; Gwyneth W. Gordon, PhD*
5:15 p.m.	-	5:30 p.m.		**Discussion** *Eric J. Bartelink, PhD; Glen P. Jackson, PhD*

Friday

Trauma Analysis

Moderator: *Vicki Wedel, PhD*
Western University of Health Sciences
Pomona, CA

Co-Moderator: *Sidney Thompson, BA*
Indianapolis, IN

8:30 a.m.	-	8:45 a.m.	**A117**	**Differentiating Handsaw Tooth Shape Based on the Analysis of the Kerf Floor Contour** *Alexandra R. Klales, PhD*; Ashley B. Maxwell, PhD; Erin Chapman, PhD*
8:45 a.m.	-	9:00 a.m.	**A118**	**Forensic Fractography of Bone Using Computed Tomography (CT) Scans** *Angi M. Christensen, PhD*; Summer J. Decker, PhD*
9:00 a.m.	-	9:15 a.m.	**A119**	**The Application of Fractography in Trauma Analysis of Complex Long Bone Fractures** *Mariyam I. Isa, MA*; Todd W. Fenton, PhD; Lillian Antonelli; Patrick E. Vaughan, MS; Feng Wei, PhD*
9:15 a.m.	-	9:30 a.m.	**A120**	**The Repository of Antemortem Injury Response (REPAIR): An Invaluable Online Resource for Known Age Fractures for Comparison and Research** *Carolyn V. Isaac, PhD*; Jered B. Cornelison, PhD; Joseph A. Prahlow, MD*
9:30 a.m.	-	9:45 a.m.	**A121**	**Variation in Human Rib Failure Mechanisms in Experimental Anterior-Posterior Loading** *Angela L. Harden, MA*; Yun-Seok Kang, PhD; Akshara Sreedhar, BS; Amanda M. Agnew, PhD*
9:45 a.m.	-	10:00 a.m.	**A122**	**Rib Fractures: An Experimental Approach to Identifying Intrinsic Sources of Variability** *Amanda M. Agnew, PhD*; Angela L. Harden, MA; Akshara Sreedhar, BS; John H. Bolte, PhD; Yun-Seok Kang, PhD*
10:00 a.m.	-	10:15 a.m.		**Break**

Biological Profile

Moderator: *Debra Prince Zinni, PhD*
Defense POW/MIA Accounting Agency
Joint Base Pearl Harbor-Hickam, HI

Co-Moderator: *Victoria M. Dominguez, PhD*
Lehman College
City University of New York
Bronx, NY

10:15 a.m. - 10:30 a.m. **A123** **Histological Age Estimation of the Femur Using Random Forest Regression**
Michael W. Kenyhercz, PhD; Christian Crowder, PhD; Victoria M. Dominguez, PhD*

10:30 a.m. - 10:45 a.m. **A124** **Longitudinal Variation in Skeletal and Dental Development**
Anna L.M. Rautman, MS; Heather J.H. Edgar, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:45 a.m. - 11:00 a.m. **A125** **Subadult Age Estimation Using a Mixed Cumulative Probit and Its Application in KidStats**
Kyra E. Stull, PhD; Michael H. Price, PhD; Louise K. Corron, PhD; Elaine Y. Chu, MA*

11:00 a.m. - 11:15 a.m. **A126** **Conditional Independence and Appropriate Number of Stages in Juvenile Dental Age Estimation**
*Valerie Sgheiza, MA**

11:15 a.m. - 11:30 a.m. **A127** **Dental Morphology as a Key to Understanding the Population History of Latinos**
*Rebecca L. George, MA**
(FSF Emerging Forensic Scientist Award Oral Presentation)

11:30 a.m. - 11:45 a.m. **A128** **Cranial Feminization Surgery Methods and Osteological Identification of Post-Operative Individuals**
Laura E. Cirillo, MA; Jordan C. Deschamps-Braly, MD; Kyra E. Stull, PhD; Marin A. Pilloud, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

11:45 a.m. - 1:00 p.m. **Lunch**

Poster Session

11:30 a.m. - 1:00 p.m. **A129** **A Classification System of Thermal Damage to Human Remains**
Elayne J. Pope, PhD; Alison Galloway, PhD*; Chelsey A. Juarez, PhD**

11:30 a.m. - 1:00 p.m. **A130** **Quantitative Ancient and Forensic DNA Techniques for Maximum DNA Recovery From Thermally Altered Bones and Teeth**
Matthew V. Emery, PhD; Katelyn L. Bolhofner, PhD; Stevie Winingear, MA; Robert F. Oldt, BS; Sreetharan Kanthaswamy, PhD; Jane E. Buikstra, PhD; Laura C. Fulginiti, PhD; Anne Stone, PhD*

11:30 a.m. - 1:00 p.m. **A131** **Assessing DNA Quality and Quantity From Cadaveric Blood Stored on Untreated Blood Cards: The Impact on Short Tandem Repeat (STR) Quality and the Utility of Variably Amplified Markers for the Individual Estimation of Trihybrid Ancestry and Admixture Proportions**
Frankie L. West, PhD; Bridget F.B. Algee-Hewitt, PhD*

11:30 a.m. - 1:00 p.m. **A132** **Postmortem Submersion Interval (PMSI) Estimation From the Microbiome of Bone in a Freshwater River**
Claire M. Cartozzo, MS; Baneshwar Singh, PhD; Jenise Swall, PhD; Tal Simmons, PhD*

11:30 a.m. - 1:00 p.m. **A133** **The Influence of Water Current on the Rate and Pattern of Decomposition**
Natalie Mirosch; Vivienne G. Heaton, PhD; Jamie K. Pringle, PhD; Kristopher D. Wisniewski, PhD*

11:30 a.m. - 1:00 p.m. **A134** **Macroscopic Analysis and Scanning Electron Microscopy (SEM) of Immature Permanent Molars Immersed in Hydrochloric Acid (HCL, 38%)**
Christine Jones, PhD; Tammy Bracewell, PhD**

11:30 a.m. - 1:00 p.m. **A135** **A Paired Comparison of the Rate and Pattern of Decomposition in Small- and Large-Bodied Human Cadavers**
Gretchen R. Dabbs, PhD; Christiane I. Baigent, MSc*

11:30 a.m. - 1:00 p.m. **A136** **The Differential Rate of Human Decomposition in an Enclosed Vehicle Compared to an Outdoor Environment**
West West, BS; Hannah Cervenka, BS; Haeli Kennedy; Joan A. Bytheway, PhD*

11:30 a.m. - 1:00 p.m. **A137** **Location, Location, Location: Environmental Variation and Human Decomposition in Knoxville, Tennessee**
William D. Cawley, MA; Derek A. Boyd, MA*

11:30 a.m. - 1:00 p.m. **A138** **A Preliminary Decomposition Study Within the Willamette Valley (WV) of Oregon: Multi-Method Comparison and Sharp Force Trauma Effects**
Cheyenne Collins; Jeanne McLaughlin, PhD; Frances J. White, PhD*

11:30 a.m. - 1:00 p.m. **A139** **Evaluating the Application of Multiple Postmortem Interval (PMI) Estimation Methods in Louisiana**
*Sophia I. Reck, MA**

11:30 a.m. - 1:00 p.m. **A140** **Utilizing Metabolomics Toward Time-Dependent Metabolite Monitoring in Different Postmortem Specimens During Human Decomposition**
Katharina M. Höland, MS; Shawn R. Campagna, PhD; Dawnie W. Steadman, PhD; Jennifer M. DeBruyn, PhD; Hayden McKee, MSc; Allison R. Mason, BS; Amanda May, PhD; Thomas Delgado; Sarah Schwing, BA, BS*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **A141** **Bacterial Community Succession: Postmortem Interval (PMI) Estimation of Forensic Anthropological Remains**
Randi M. Depp, MS; Luis L. Cabo, MS; Michael Foulk, PhD*

11:30 a.m. - 1:00 p.m. **A142** **The Effects of Scavenging on a Donor From the Western Carolina University Forensic Osteology Research Station (FOREST)**
*Christine Bailey, MA**

11:30 a.m. - 1:00 p.m. **A143** **Coyote Pup Scavenging as Distinct From Adult Behavior: The Potential for Reproductive Patterns to Inform the Estimation of Postmortem Interval**
Christiane I. Baigent, MSc; David E. Kintz, Jr., BS*; Melissa A. Connor, PhD; Gretchen R. Dabbs, PhD*

11:30 a.m. - 1:00 p.m. **A144** **The Patterns of Striped Skunk Scavenging on Human Remains**
Alexander J. Smith, BA; Melissa A. Connor, PhD*

11:30 a.m. - 1:00 p.m. **A145** **Instars and Stripes: The Scavenging Behavior and Taphonomic Contribution of the Striped Skunk**
Rachel E. Smith, BS; Jane Wankmiller, PhD*

11:30 a.m. - 1:00 p.m. **A146** **Out of the Jaws: Identifying Postmortem Alligator (*A. mississippiensis*) Scavenging on the Human Skeleton**
Dayanira Lopez, MS; Heather A. Walsh-Haney, PhD; Sunil P.A. Hewage*

11:30 a.m. - 1:00 p.m. **A147** **Does Donor Skin Color Affect Total Body Scores (TBSs)?**
Crystal L. Crabb, BS; Megan F. Veltri, BS**

11:30 a.m. - 1:00 p.m. **A148** **Preliminary Investigations for Documenting Human Skeletal Remains in Obstructed Wooded Environments**
Morgan J. Ferrell, BA; John J. Schultz, PhD; Megan L. McCollum*

11:30 a.m. - 1:00 p.m. **A149** **Refining Data Collection Parameters for the Photogrammetric Documentation of Outdoor Skeletal Scatter Scenes: Considering Ground Surfaces**
Megan L. McCollum; John J. Schultz, PhD; Morgan J. Ferrell, BA*

11:30 a.m. - 1:00 p.m. **A150** **Identification of Bone Using an Alternate Light Source (ALS) in Terrestrial Pedestrian Searches**
Sara M. Getz, PhD; Christian Petersen, PhD; Tanyin Watson*

11:30 a.m. - 1:00 p.m. **A151** **A Retrospective Study of Forensic Fire Searches and Recoveries at Mercyhurst University: 1983-2019**
Diana L. Messer, MS; Andrea Ost, MS; Dennis C. Dirkmaat, PhD*

11:30 a.m. - 1:00 p.m. **A152** **An Evaluation of Mitochondrial DNA Success Rates in a Commingled Assemblage From the Cabanatuan Prisoner of War (POW) Cemetery**
Mary S. Megyesi, PhD; Diana L. Messer, MS; Jessica K. Juarez, PhD; Sarah M. Richer, PhD; Suni M. Edson, MS*

11:30 a.m. - 1:00 p.m. **A153** **Standardizing the Use of Grave Markers for Unidentified Migrant Remains in South Texas Cemeteries**
Molly A. Kaplan, BA; Kate Spradley, PhD; Mercedes Doretti, MA; Eduardo Canales, BS; Christine M. Kovic, PhD; Alberto Giordano, PhD; Nicholas P. Herrmann, PhD; Courtney C. Siegert, MA; Chloe P. McDaneld, MA; Molly Miranker, MA; Timothy P. Gocha, PhD*

11:30 a.m. - 1:00 p.m. **A154** **Assessing Fluctuating Asymmetry in the Crania and Lower Limb Bones of Two Modern Populations**
Shelby Garza, MA; Emilie Wiedenmeyer, BA; Kari Helgeson, MA; Kate Spradley, PhD*

11:30 a.m. - 1:00 p.m. **A155** **Migrants, Crime, and Unidentified Bodies: The Wits Human Identification Unit (HIU) Experience**
Desiré Brits, PhD; Maryna Steyn, PhD*

11:30 a.m. - 1:00 p.m. **A156** **A Multidisciplinary Identification Approach of Armed Conflict Victims Exhumed From La Resurección Cemetery in Granada, Colombia**
*Alexandra Semma Tamayo, MS**

11:30 a.m. - 1:00 p.m. **A157** **The Detection of Cancerous Lesions in Skeletal Remains Using Visual Methods and Radiographs**
*Sara Fatula, BS**

11:30 a.m. - 1:00 p.m. **A158** **The Characterization of Peri-Mortem Trauma on World War II (WWII) German Pilots**
Emeline Verna; Laetitia Bouniol, MS; Emeline Sperandio, MS; Loic Lalys, PhD; Caroline Costedoat, PhD; Michel Signoli, PhD; Jean-marc Femolant, MS*

11:30 a.m. - 1:00 p.m. **A159** **Photogrammetry Using Multiple Camera Systems of Mass Graves in a Humanitarian Context**
Sarah F. Skoropa, BA; Roland Wessling, MSc*

11:30 a.m. - 1:00 p.m. **A160** **Age-At-Death Estimation Using Dental Cementum Increments: Validation and Limitations**
Benoit Bertrand, PhD; Vadim Mesli, MD; Anne A. Becart, DDS, PhD; Martine Vercauteren, PhD; Valéry C. Hédouin, MD, PhD; Didier Gosset, MD, PhD*

11:30 a.m. - 1:00 p.m. **A161** **Craniofacial Anthropometric Analysis Between the Nose and Nasal Aperture Utilizing 3D Computed Tomography (CT) Scanned Images From Korean Subjects**
Joon Yeol Ryu; Won-Joon Lee, MD*

11:30 a.m. - 1:00 p.m. **A162** **The Determination and Prevalence of Non-Forensic Specimens in an Unidentified Collection at the Georgia Bureau of Investigation (GBI)**
Christopher M. Goden, BS; Alice F. Gooding, PhD*

Methods and Ethics

Moderator: *Emily R. Streetman, PhD*
Omaha, NE

Co-Moderator: *Michala K. Stock, PhD*
High Point University
High Point, NC

1:00 p.m. - 1:15 p.m. **A163** **Drugs From Dry Bone: How Toxicology Can Add to the Biological Profile**
Lucie Biehler-Gomez; Gaia Giordano, BS; Domenico Di Candia, PhD; Lorenzo Franceschetti, MD; Cristina Cattaneo, PhD*

1:15 p.m. - 1:30 p.m. **A164** **The Detection of Chemical Weapon Nerve Agents in Bone: An Anthropological Approach to Skeletal Toxicology**
Katie M. Rubin, PhD; Bruce A. Goldberger, PhD*

1:30 p.m. - 1:45 p.m. **A165** **Pore Extractor: A Micro-Computed Tomography (micro-CT) Image Processing Suite for Characterizing 3D Pore Morphometry in Cortical Bone Tissue**
Mary E. Cole, PhD; Sam D. Stout, PhD; Amanda M. Agnew, PhD*

1:45 p.m. - 2:00 p.m. **A166** **Resolving Commingling Via Osteometric and Isotopic Data**
Kyle A. McCormick, PhD; Gregory E. Berg, PhD; Lesley A. Chesson, MS*

2:00 p.m. - 2:15 p.m. **A167** **Rare is Good, Unique is Better: Testing Maxillary Sinus Morphologies for Human Identification**
Teresa M. Runge, MS; Joel D. Irish, PhD; Matteo Borrini, PhD*

2:15 p.m. - 2:30 p.m. **A168** **A Novel Method to Augment Personal Identification in the Medical Examiner/Coroner Setting**
Sharon M. Derrick, PhD; Jason M. Wiersema, PhD; Deborrah C. Pinto, PhD; Benjamin F. Rentfrow; Blair Sterba-Boatwright, PhD*

2:30 p.m.	-	2:45 p.m.	**A169**	**Wartime Misidentifications of United States Casualties by the Central Identification Unit (CIU) in Kokura, Japan** *Alexander F. Christensen, PhD**
2:45 p.m.	-	3:00 p.m.	**A170**	**United States State Laws and Human Skeletal Remains: Are Old Bones Better Protected Than Forensic Cases?** *Melinda L. Carter, MD, PhD*; Justine Newman; Ryan M. Seidemann, MA; Sebastian R. Alston, MD*
3:00 p.m.	-	3:15 p.m.	**A171**	**Understanding Current Levels of Forensic Occupational Stress and Wellness: Building a Foundation for Increased Forensic Science Workforce Resiliency** *Justin Goldstein, MA*; Helen S. Alesbury, MA; Jamilla Dick-Quashie, MS*
3:15 p.m.	-	3:30 p.m.		**Break**

A Reassessment of Assessing Race: Ancestry Estimation and Its Implications for Forensic Anthropology and Beyond

Moderator: *Heather J.H. Edgar, PhD*
Albuquerque, NM

Co-Moderator: *Justin R. Maiers, MS*
University of South Florida
Tampa, FL

3:30 p.m.	-	3:45 p.m.	**A172**	**Population Structure, Population Heterogeneity, and Sources of Error in the Forensic Estimation of "Race"** *Heather J.H. Edgar, PhD**
3:45 p.m.	-	4:00 p.m.	**A173**	**What Are We Really Estimating? An Evaluation of What We Commonly Refer to as Ancestry Estimation** *Kate Spradley, PhD*; Richard Jantz, PhD*
4:00 p.m.	-	4:15 p.m.	**A174**	**The Biogeographic Profile in Forensic Anthropology: An Alternative to Ancestry for Casework Along the United States-Mexico Border** *Bridget F.B. Algee-Hewitt, PhD*; Rebecca Vandewalle, MS; Bruce E. Anderson, PhD*
4:15 p.m.	-	4:30 p.m.	**A175**	**A Geometric Morphometric Approach to Quantify the Impact of Admixture on Craniofacial Form** *Joseph T. Hefner, PhD*; Amber M. Plemons, MA*
4:30 p.m.	-	4:45 p.m.	**A176**	**Craniometrics vs. Single Nucleotide Polymorphism (SNP)s: Is There a Correlation?** *Kamar Afra, MA*; Michelle D. Hamilton, PhD; Bridget F.B. Algee-Hewitt, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
4:45 p.m.	-	5:00 p.m.	**A177**	**A Call for a Paradigm Shift in the Study of Ancestry** *Ann H. Ross, PhD*; Jonathan D. Bethard, PhD*; Elizabeth A. DiGangi, PhD*
5:00 p.m.	-	5:15 p.m.	**A178**	**Ancestry Estimation, Race Science, and Scientific Racism in Forensic Anthropology** *Donovan M. Adams, MS*; Marin A. Pilloud, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
5:15 p.m.	-	5:30 p.m.		**Discussion** *Stephen Ousley, PhD*

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**B1**	**Complex DNA Mixture Analysis: Massively Parallel Sequencing (MPS) of Rare Single Nucleotide Polymorphisms (SNPs)** *Martha Petrovick, PhD*; Natalie Damaso, PhD; Tara Boettcher, BS; Josh Dettman, PhD; Darrell O. Ricke, PhD; Philip Fremont-Smith, MS; Kyleen E. Elwick, PhD; Mark F. Kavlick, PhD; James M. Robertson, PhD; Eric Schwoebel, PhD*
11:30 a.m.	-	1:00 p.m.	**B2**	**Implementing Hematoxylin Into Casework at the North Carolina State Crime Laboratory** *Lindsey Admire, MS*; Kristen Crawford, MS; Melanie Carson, BS; Samantha McDonald, BS; David M. Freehling, BS*
11:30 a.m.	-	1:00 p.m.	**B3**	**The "Secondary Burial" in Southern Italy: How Traditional Funerary Practices Affect DNA Preservation in Forensic Human Identification** *Ciro Di Nunzio, PhD*; Michele Di Nunzio*; Aldo Di Nunzio*; Pietrantonio Ricci, PhD; Matteo Borrini, PhD**
11:30 a.m.	-	1:00 p.m.	**B4**	**The Student Experience in Participating in a Collaborative Exercise for Methylation-Based Body Fluid Identification** *Carly E. Mills, BS*; Yijian Cao, BSc; Daniele S. Podini, PhD; Hwan Young Lee, PhD*
11:30 a.m.	-	1:00 p.m.	**B5**	**A Student Experience Evaluating the Ability of a Methylation-Based Age Prediction Model to Be Implemented in the Forensic Laboratory as Part of a Collaborative Study** *Yijian Cao, BSc*; Carly E. Mills, BS*; Hwan Young Lee, PhD; Daniele S. Podini, PhD*
11:30 a.m.	-	1:00 p.m.	**B6**	**A Comparison of InnoQuant® and Quantifiler® Trio as Quantification/Degradation Methods for Predicting Next Generation Sequencing (NGS) Success** *Jessica M. McLamb, MS; Natalie Damaso, PhD; James M. Robertson, PhD**
11:30 a.m.	-	1:00 p.m.	**B7**	**Further Evaluation of a Dry Vacuuming Technique for Recovery of DNA From Handwritten Documents** *Christian Hopkins, BS; Patrick McLaughlin, BS; Mechthild K. Prinz, PhD**
11:30 a.m.	-	1:00 p.m.	**B8**	**Eye and Skin Color Identity Single Nucleotide Polymorphisms (SNPs) Screening Using Polymerase Chain Reaction (PCR) High Resolution Melt (HRM) Assays** *Lakin Prescott*; Farah Narmouq*; Kelly M. Elkins, PhD*
11:30 a.m.	-	1:00 p.m.	**B9**	**Assessing Potential Inhibitory Effects of Personal Lubricant on the Ability to Detect Biomarkers Consistent With Semen, Saliva, and Vaginal Fluid** *Catherine O. Brown, MSFS*; Heather E. McKiernan, PhD; Phillip Danielson, PhD; Kevin M. Legg, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**B10**	**Developing a Forensically Relevant Single-Cell Interpretation Strategy for Human Identification** *Amanda J. Gonzalez, MS*; Harish Swaminathan, PhD; Ken Duffy, PhD; Catherine M. Grgicak, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**B11**	**High-Throughput and Simultaneous Analysis of 12 Cannabinoids in Hemp Oil Using Liquid Chromatography With Ultraviolet (LC-UV) Detection** *Liguo Song, PhD*; Shashi B. Pathipaka, MS; James D. Leese, BS; Madison Chao, BS; Tranellie Collins, BS; John P. Westein, BS*

11:30 a.m. - 1:00 p.m. **B12** **Cannabinoid Content in Commercially Available Oils**
Tiffany M. Matyja; Kenyon M. Evans-Nguyen, PhD; John Struss, PhD*

11:30 a.m. - 1:00 p.m. **B13** **The Detection and Identification of Synthetic Cathinones by Portable Nano-Liquid Chromatography (Nano-LC) With Dual Wavelength Ultraviolet (UV) Detection**
Marisa C. May, BS; David C. Pavone, BS; Ira S. Lurie, PhD*

11:30 a.m. - 1:00 p.m. **B14** **Retrofitting Massively Parallel Sequencing (MPS) for HLA-DQA1 and Polymarker (PM) in Forensic Casework**
Audrey V. Hoyle, BS; Erin Weaver, BS*; Fabio Oldoni, PhD; Robert Lagacé, BS; Daniele S. Podini, PhD*

11:30 a.m. - 1:00 p.m. **B15** **A Method Development for Analyzing 17 Benzodiazepines and Metabolites Used in Crimes Using Solid Phase Extraction-Tandem Mass Spectrometry**
Vadoud Niri, PhD; Kimberly E. LaGatta, BS; Michaela Gysbers; Taylor Maslin; Shokouh Haddadi, PhD*

11:30 a.m. - 1:00 p.m. **B16** **"Free Range" Gunshot Primer Residue: A Study on Multiple Transfers of Gunshot Primer Residue**
Christopher P. Chany, MS; Thomas R. White, BS; Stephanie A. Freiwald, BS*

11:30 a.m. - 1:00 p.m. **B17** **Ambient Ionization Mass Spectrometry (AMS): A New Forensic Tool for Adhesive Tape Evidence Discrimination**
Maureen E. Oliva, BS; Yinglei Pu, BS; Dong Zhang, BS; Gerardo Gamez, PhD*

11:30 a.m. - 1:00 p.m. **B18** **Supplementary Viewing Techniques of Gunshot Residue (GSR) Utilizing Infrared (IR) and Fluorescence**
Christopher L. Ardell, BS; Zachary E. Weitzel, BS; Charles A. Smith, BS; Amanda L. Bazzanini, MS*

11:30 a.m. - 1:00 p.m. **B19** **The Development of a Rapid, Reliable Detection Method for Synthetic Cathinones**
Mario O. Vendrell-Dones, BS; Chiara Deriu, MS; Ling Wang, MS; Bruce R. McCord, PhD*

11:30 a.m. - 1:00 p.m. **B20** **A Validation Study of the Synthetic Cannabinoid 5-Fluoro PB-22**
Trista Gray, BS; Erin Shonsey, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B21** **Metabolism of Furanylfentanyl in Fresh Human Hepatocytes: Detection and Confirmation of Furan Ring-Opened Carboxylic Acid Metabolite**
Tatsuyuki Kanamori; Yuki Okada, MS; Hiroki Segawa, PhD; Tadashi Yamamuro, PhD; Kenji Kuwayama, PhD; Kenji Tsujikawa, PhD; Yuko Togawa Iwata, PhD*

11:30 a.m. - 1:00 p.m. **B22** **An Analysis of Smokeless Powders, Smokeless Powder Residues, and Pyrolysis Products by Gas Chromatography/Mass Spectrometry (GC/MS)**
Emily C. Lennert, BS; Candice Bridge, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B23** **An Analysis of Test Exemplar Techniques in Relation to Footwear Examinations**
Ismail M. Sebetan, MD, PhD; Paul Stein, PhD*; Amy Laabs, MFS**

11:30 a.m. - 1:00 p.m. **B24** **Magneto-Archimedes Levitation (MagLev) Separation of Drugs**
Joe Bozenko, MSc; Christoffer K. Abrahamsson, PhD; Michael J. Fink, PhD; Amit Nargarkar, PhD; Dan Preston, PhD; Shencheng Ge, PhD; George Whitesides, PhD*

11:30 a.m.	-	1:00 p.m.	**B25**	**An Investigation Into the Use of Amino Acid Ratios to Distinguish Between the Hairs of Similar Individuals** *Allison M. Macri*; Alyssa L. Marsico, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**B26**	**A Comparison of Area of Origin Determination of Impact Spatter From Vertical and Horizontal Surfaces** *Alexis P. Johnson, BA*; Michael J. Van Stratton, BS; Melissa M. Bailey, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**B27**	**An Analysis of Organic and Inorganic Gunshot Residues (OGSR and IGSR) Via Electrochemical Methods With Screen-Printed Carbon Electrodes and Nanoparticle Modifications** *Colby E. Ott, MS*; Pedro Calderón-Arce, MS; Korina Menking-Hoggatt, MS; Courtney H. Vander Pyl, MS; Ana L. Alvarado-Gámez, PhD; Tatiana Trejos, PhD; Luis E. Arroyo, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**B28**	**The Utilization of Classical Forensic Methods in the Study and Preservation of Human History and Cultures, the Conservation and Restoration of Objects of Art and Artifacts, as Well as the Detection of Art Fraud and Counterfeiting** *Nicholas Petraco, MS*; Mary Eng, BS*
11:30 a.m.	-	1:00 p.m.	**B29**	**The Chemical Composition of Gunshot Residue (GSR) of Commonly Encountered Samples in Shooting Events in Kosovo by an Optimized and Validated Scanning Electron Microscopy With Energy Dispersive X-Ray Spectroscopy (SEM/EDS) Method** *Milazim Tahirukaj*; Blerim Olluri, PhD*; Andriana Surleva**
11:30 a.m.	-	1:00 p.m.	**B30**	**The Effect of pH on Presumptive Forensic Serological Testing** *Ariel B. Smart, BS*; Kimberlee Sue Moran, MSc; Ja'Neisha Hutley, MS; Stephanie L. Murphy, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**B31**	**Analyzing Gamma-Hydroxybutyrate (GHB) by Fourier Transform Infrared Spectroscopy (FTIR) With Minimal Sample Preparation** *Anna Stuteville*; Lauren L. Richards-Waugh, PhD; Samantha M. Leach, MS; Morgan M. Levitas, MFS; Luke C. Short, PhD*

Thursday—Session I

Sample Collection

Moderator: *Janine Kishbaugh, MS*
Cedar Crest College
Allentown, PA

8:30 a.m.	-	8:45 a.m.	**B32**	**Presumptive Test Compatibility With Efficient DNA Collection Swabs** *Bruce Budowle, PhD**
8:45 a.m.	-	9:00 a.m.	**B33**	**A Comparison of DNA Typing Success in Compromised Blood and Touch Samples Based on Sampling Swab Composition** *Ciara Rhodes; Memunatu J. Koroma, BS; Brittany C. Hudson, MS; Nubaha Islam, BS; Haris Mukic, BS; Tracey Dawson Cruz, PhD; Robert A. Bever, PhD; Sarah J. Seashols Williams, PhD**

9:00 a.m.	-	9:20 a.m.	**B34**	**A Comparison of DNA Profiles Recovered From Cotton Versus Nylon-Flocked Swabs From Postcoital Cervicovaginal Samples** *Kathleen M. Maguire, BS*; Janine Kishbaugh, MS; Jillian Conte, PhD; Lawrence Quarino, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
9:20 a.m.	-	9:35 a.m.	**B35**	**Direct Polymerase Chain Reaction (PCR) Using MicroFLOQ® Direct Swabs With a Modified QIAGEN® Investigator 24plex GO! Protocol From Decomposing Human Remains for Disaster Victim Identification (DVI) Applications** *Coral K. Loockerman, MS; Sheree R. Hughes, PhD; Rachel M. Houston, PhD** *(FSF Emerging Forensic Scientist Award Oral Presentation)*
9:35 a.m.	-	9:55 a.m.	**B36**	**Criminalists at the Crime Scene: Where Do They Come From and Where Can They Go?** *Rebecca E. Bucht, PhD*; Michelle D. Miranda, PhD*; Claude Roux, PhD*; Sheila Willis, PhD**
9:55 a.m.	-	10:10 a.m.		**Break**

Body Fluids and Screening

Moderator: *Sabrina S. Seehafer, PhD*
Ankeny, IA

10:10 a.m.	-	10:25 a.m.	**B37**	**The Utilization of Sex Hormone Antibodies for Screening and Separation of Trace Biological Mixtures** *Kristin Jones, BS*; Susan Greenspoon, PhD; Christopher J. Ehrhardt, PhD*
10:25 a.m.	-	10:40 a.m.	**B38**	**Classification of Body Fluid Source in Dried Samples Using a Panel of MicroRNAs (miRNAs)** *Ciara Rhodes*; Annabelle C. Campbell, BSc; Carolyn Lewis, BS; Tracey Dawson Cruz, PhD; Edward Boone, PhD; Sarah J. Seashols Williams, PhD*
10:40 a.m.	-	11:00 a.m.	**B39**	**A Determination of the Optimal Method for the Detection of Vaginal Fluid** *Melissa Rogers*; Lawrence Quarino, PhD; Amrita Lal-Paterson, MSFS; Janine Kishbaugh, MS* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
11:00 a.m.	-	11:15 a.m.	**B40**	**Forensic Body Fluid Identification Using Microbiome Signature Attribution Through 18S Recombinant DNA (rDNA) High-Throughput Sequencing** *Alyssa Daniels*; Ines Benaissa, BS; Sarah J. Seashols Williams, PhD; Baneshwar Singh, PhD; Denise Wohlfahrt, BS; Kathleen D. Brim, BS; Eric A. Abshier, MS; Francy S. Nogales, BS; Haris Mukic, BS; Angela L. Brand, MS* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
11:15 a.m.	-	11:30 a.m.	**B41**	**Integration of Microchip Electrophoresis and a Validated Messenger RNA (mRNA) Panel as a Novel Approach to Forensic Body Fluid Identification** *Tiffany R. Layne, MS*; Rachel I. Fleming, PhD; Dion Sheppard, MS; Andrew Sarman, MS; John Bone, BS; James P. Landers, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
11:30 a.m.	-	11:50 a.m.	**B42**	**Advances in the Development of Portable Surface-Enhanced Raman Spectroscopy (SERS) for Rapid, Sensitive, Confirmatory Identification of Human Body Fluids** *Miranda L. Shaine, BS; Richard S. Andino, PhD; Ranjith Premasiri, PhD; Harrison Ingraham, BS; Amy N. Brodeur, MFS; Lawrence Ziegler, PhD**
11:50 a.m.	-	12:00 p.m.		**Discussion**
12:00 p.m.	-	1:00 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**B43**	**A Comparison of Short Tandem Repeat (STR) Allelic Recovery Post-Ultraviolet (UV) Damage Utilizing the PreCR® Repair Method: Singleplex Versus Multiplex Polymerase Chain Reaction (PCR) Amplification** *Morgan Barrett, BS*; David San Pietro, PhD*
11:30 a.m.	-	1:00 p.m.	**B44**	**A Comparison of Genotyping Success of Cotton and FLOQ™ Swabs on Casings Using Direct Polymerase Chain Reaction (PCR)** *Natalia Czado, MS*; Stephen D. Towery; Yolonda B. Miller*
11:30 a.m.	-	1:00 p.m.	**B45**	**A Comparison of the Overall Quality and Quantity of DNA Evidence From Fingerprints Collected From Various Substrates Found at Simulated Crime Scenes** *Sulekha Coticone, PhD*; Lora Bailey Van Houten, MS**
11:30 a.m.	-	1:00 p.m.	**B46**	**An Internal Validation of the ANDE® 6C Rapid DNA Analysis System for Forensic Samples** *Krista A. Herrera, BS*; Brandy L. Plean, MS; Ashley N. Henderson, BS; Amy McGuckian, MSFS; Kelly Beatty, MSFS; Julie Conover Sikorsky, MS*
11:30 a.m.	-	1:00 p.m.	**B47**	**Accelerating DNA Extractions Using a Microwave Toward Increasing the Speed and Success of Rapid DNA Analysis** *Steven B. Lee, PhD*; Eric Yan Hung Yu, MS; Kenya Thomas, BS; Georgiana C. Gibson-Daw, PhD; Ling Wang, MS; Dide Boelens, MS; Roberta Mariot, PhD; Meghan N. Roig, MSFS; Mallory Baud, BS; Mirna S. Ghemrawi, MS; Fabiana Taglia; Bruce R. McCord, PhD; Kevin Lothridge, MSc*
11:30 a.m.	-	1:00 p.m.	**B48**	**Considerations for Database Searching With Siblings** *Lisa Sansom, BS*; Melody Josserand, MS; Michael D. Coble, PhD*
11:30 a.m.	-	1:00 p.m.	**B49**	**Internal Validation of the Applied Biosystems™ RapidHIT™ ID System Using ACE and INTEL Cartridges** *Ashley N. Henderson, BS*; Brandy L. Plean, MS; Krista A. Herrera, BS; Amy McGuckian, MSFS; Kelly Beatty, MSFS; Julie Conover Sikorsky, MS*
11:30 a.m.	-	1:00 p.m.	**B50**	**Performance of Microhaplotype and Short Tandem Repeat (STR) Biomarkers in Mixture Detection and Deconvolution** *Fabio Oldoni, PhD*; Drew A. Bader; Chiara Fantinato; Sharon C. Wootton, PhD; Robert Lagacé, BS; Ryo Hasegawa, BS; Joseph P. Chang, BS; Daniele S. Podini, PhD*
11:30 a.m.	-	1:00 p.m.	**B51**	**Optimization Parameters of Fragmentary Voltage and Collision Energy for the Identification and Separation of 1,3,5-Triamino-2,4,6-Trinitrobenzene (TATB) From Other Explosives With Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)** *Blerim Olluri, PhD*; Milazim Tahirukaj*; Xhemajl Ademaj, PhD*; Herolind Krasniqi**
11:30 a.m.	-	1:00 p.m.	**B52**	**Forensic Fiber Analysis by Thermal Desorption/Pyrolysis Direct Analysis in Real Time Mass Spectrometry (TD/Py-DART®-MS)** *Mengliang Zhang, PhD*; Jared Frazier; Virginia Benefield*
11:30 a.m.	-	1:00 p.m.	**B53**	**Preservation of Trace Compounds From Headspace Analysis in Adsorbent Capillaries** *Megan Harries, BS; Kavita M. Jeerage, PhD**
11:30 a.m.	-	1:00 p.m.	**B54**	**The Sensitivity of Fingermark Color Contrast Between Sexes** *Mallory R. Einfalt, BS*; Josep De Alcaraz-Fossoul, PhD; Brooke W. Kammrath, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*

11:30 a.m. - 1:00 p.m. **B55** **Data Fusion From Spectroscopic Techniques for the Discrimination of Colored Automotive Paint Mixtures**
Morgan N. Carpenter, BS; Patrick Buzzini, PhD*

11:30 a.m. - 1:00 p.m. **B56** **Forensic Discrimination of Concrete Pieces From Different Sources Using Inductively Coupled Plasma/Mass Spectrometry (ICP/MS)**
Masaaki Kasamatsu; Yasuhiro Suzuki*

11:30 a.m. - 1:00 p.m. **B57** **Black and White Foils as Packaging Material in Murder Cases**
*Cornelia I. Blaga; Peter de Joode; Cees Vooijs; Zita Y. van Zanten; Willem Wiarda, MS; Gerard J.Q. van der Peijl, PhD**

11:30 a.m. - 1:00 p.m. **B58** **The Use of Laser-Induced Breakdown Spectroscopy (LIBS) for the Identification of Bullet Holes**
Noah Scarpelli; Brooke W. Kammrath, PhD; Virginia M. Maxwell, DPhil*

11:30 a.m. - 1:00 p.m. **B59** **A Characterization of Nylanthrene Dyes in the Differentiation of Macroscopically Similar Black Fibers Using Light Microscopy and Visible Microspectrophotometry (MSP)**
Andra Lewis, MS; Christopher S. Palenik, PhD; Skip Palenik, BS; Patrick Buzzini, PhD*

11:30 a.m. - 1:00 p.m. **B60** **The Forensic Analysis of Skin-Safe Stamp Pad Inks**
*Swetha Rajagopal, MS; Thomas Kubic, JD, PhD; John Lombardi, PhD; Michelle D. Miranda, PhD**

11:30 a.m. - 1:00 p.m. **B61** **A Novel Approach to the Identification of Beetles That Colonize Remains: A Chemometric Processing of Direct Analysis in Real-Time Mass Spectrometry (DART®-HRMS) Derived Chemical Signatures of Carrion Insects**
Amy M. Osborne, BS; Justine E. Giffen, BS; Jennifer Rosati, PhD; Rabi A. Musah, PhD*

11:30 a.m. - 1:00 p.m. **B62** **A Novel Approach for the Collection and Characterization of Inorganic Gunshot Residue (IGSR) Standards**
Korina Menking-Hoggatt, MS; Edward M. Pollock; Tatiana Trejos, PhD*

11:30 a.m. - 1:00 p.m. **B63** **Explosive Residue Transfer From Various Explosive Ordinance Disposal (EOD) Render Safe Procedures (RSPs)**
*Joseph Stein**

11:30 a.m. - 1:00 p.m. **B64** **Paper-Based Electrochemical Detection of Drugs of Abuse in Sweat**
Rosa L. Cromartie, BS; Bruce R. McCord, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B65** **Improving the Efficiency of Forensic Science Evaluations of Mass Disaster Damages**
*Gustavo Costa, MS**

11:30 a.m. - 1:00 p.m. **B66** **Front-End Fractionation of DNA and Proteins for the Simultaneous Genetic and Serological Analysis of Sexual Assault Case Samples**
Morgan S. Peters; Catherine O. Brown, MSFS; Heather E. McKiernan, PhD; Dennis J. DeLuca, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B67** **Vaping in the Fourth Generation: A Comparison of Nicotine Dose Capture in Different Forms of Concentrated Substances**
Erica Sales; Justin L. Poklis, BS; Joseph B.M. Turner, PhD; Michelle R. Peace, PhD*

11:30 a.m. - 1:00 p.m. **B68** **An Evaluation of the Investigator® 26plex QS STR Kit and a Comparison With Two Commercially Available Short Tandem Repeat (STR) Kits**
Madeline G. Roman, BS; Ryan Gutierrez, BS; Carrie Mayes, PhD; Bobby Larue, Jr., PhD; Rachel M. Houston, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B69** **A Non-Destructive Genomic Analysis of Single Pollen Grains**
Luz J. Kelley, MS; Bryan McCullough; Elizabeth J. Rose, BS; Matthieu Baudelet, PhD; Mauro Martinez Labrador, MPh*

11:30 a.m. - 1:00 p.m. **B70** **The Enhancement of Human Scent Profiles as Forensic Evidence**
Alice B. Boone, BS; Kenneth G. Furton, PhD; Howard K. Holness, PhD*

11:30 a.m. - 1:00 p.m. **B71** **Bondage Practices in an Asphixiation Death: An Accidental Death**
Alberto Alongi; Elvira Ventura Spagnolo, MD*; Gennaro Baldino, MD*; Cristina Mondello, MD; Antonina Argo, PhD*

11:30 a.m. - 1:00 p.m. **B72** **The Characterization of Volatile Organic Compounds (VOCs) Present in the Headspace of Decomposing Livestock, Fish, and Human Remains**
Jisook Min, PhD; Youngwoong Han; Bohyun Kim; Young-Shin Go; Seh Yeon Park; Sangcheol Heo; Kiwook Kim, MS; Giwon Park*

11:30 a.m. - 1:00 p.m. **B73** **An Assessment of Elemental Homogeneity in Glass Using Micro-X-Ray Fluorescence Spectroscopy (µ-XRF) and Laser-Induced Breakdown Spectroscopy (LIBS)**
Oriana Ovide; Zachary B. Andrews*; Ruthmara Corzo, PhD; Tatiana Trejos, PhD*

11:30 a.m. - 1:00 p.m. **B74** **The Identification of the Polymer-Bonded Drugs on the Fabric Surface: A Challenge to the Forensic Drug Analysts**
Shahnaz Akhtar, MPhil; Abdul Razaq, MPhil*; Khalid S. Feras, MPhil*; Muhammad Irfan Ashiq, PhD*; Mohammad A. Tahir, PhD*

Sample Prep and Extraction

Moderator: *Daniele S. Podini, PhD*
Department of Forensic Science
Washington, DC

Co-Moderator: *Katherine B. Gettings, PhD*
National Institute of Standards and Technology
Gaithersburg, MD

1:00 p.m. - 1:15 p.m. **B75** **The Influence of DNA Extraction Methods on the Quantity and Quality of Retained Genetic Material**
Brian Kemp; Kristine G. Beaty, PhD; Brittany L. Bingham, BA; Upuli A. DeSilva; Mary Faith Flores; Cara Monroe; Jodi Lynn Barta, PhD*

1:15 p.m. - 1:30 p.m. **B76** **Where, Oh Where, Has the DNA Gone?**
Kristine G. Beaty, PhD; Brittany L. Bingham, BA; Upuli A. DeSilva; Mary Faith Flores; Cara Monroe; Jodi Lynn Barta, PhD; Brian Kemp*

1:30 p.m. - 1:45 p.m. **B77** **Battling the Backlog: A Novel Bioanalytical System for the Separation and Collection of Intact Spermatozoa**
Sarah Wright; Norman Dovichi, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:45 p.m. - 2:00 p.m. **B78** **WITHDRAWN**

2:00 p.m.	-	2:15 p.m.	**B79**	**The Application of Optical Trapping to Obtain Single-Source Short Tandem Repeat (STR) Profiles From Forensically Relevant Body Fluid Mixtures With Modified DNA Analysis Workflow** *Benjamin J. OBrien, BS*; Michael K. Valle, BS; Nicole A. Auka, MSFS; Tracey Dawson Cruz, PhD; Joseph E. Reiner, PhD; Sarah J. Seashols Williams, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
2:15 p.m.	-	2:30 p.m.	**B80**	**The Development and Automation of a Swab In-DNA Out Platform Using Dynamic Solid Phase Extraction (SPE)** *Leah M. Dignan, BS*; Kimberly Jackson; Michael Shane Woolf, MS; Christopher J. Tomley, BS; James P. Landers, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
2:30 p.m.	-	2:45 p.m.		**Break**

Non-Human DNA

Moderator: *Andrew J. Schweighardt, PhD*
Northport, NY

Co-Moderator: *Nasir A. Butt, PhD*
Cuyahoga County Medical Examiner's Office
Cleveland, OH

2:45 p.m.	-	3:00 p.m.	**B81**	**Developing Investigative Leads and Potential Evidence in Wildlife Crime: Consideration of Human DNA Recovery From Handled Eggs and Birds of Prey Feathers** *Katherine L. Wood, MS; Georgina E. Meakin, PhD**
3:00 p.m.	-	3:15 p.m.	**B82**	**Pyrosequencing-Based DNA Analysis for Species Identification** *Mirna S. Ghemrawi, MS*; Frank Fischinger, MS; Mark Guilliano, PhD; George T. Duncan, PhD; Bruce R. McCord, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
3:15 p.m.	-	3:30 p.m.	**B83**	**A Short Interspersed Nuclear Element (SINE) -Based Multiplex Quantitative Real-Time Polymerase Chain Reaction (qPCR) Assay for Human-Dog-Cat Species Identification and DNA Quantification** *James W. Liang, BS*; Heather G. Miller Coyle, PhD*
3:30 p.m.	-	3:50 p.m.	**B84**	**Using Environmental DNA (eDNA) and Vertebrate Metabarcoding to Characterize Biological Communities: A New Method for Conservation Genetics and Wildlife Forensics** *Hillary L. Eaton, PhD*; Catherine E. Benson, PhD; Matthew J. Valente, MS; Courtney S. Turner-Rathbone, BS*
3:50 p.m.	-	4:05 p.m.	**B85**	**Human Identity From the Mosquito Midgut Using GlobalFiler™ Express** *Mollie S. Comella*; Joann Butkus; Scott Lindner, PhD; Reena Roy, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
4:05 p.m.	-	4:20 p.m.	**B86**	**Signatures of Suicide in the Human Postmortem Microbiome** *Katelyn A. Smiles*; Jennifer L. Pechal, PhD; Carl J. Schmidt, MD; Heather R. Jordan, PhD; M. Eric Benbow, PhD*

4:20 p.m.	-	4:35 p.m.	**B87**	**The Impact of Environmental Exposure and Chemical Contaminants on Microbial Signature Associated With Forensically Relevant Human Biological Samples** *Denise Wohlfahrt, BS*; Francy S. Nogales, BS; Raquel Green, BS; Najai Bradley; Kathleen D. Brim, BS; James P. Brooks, PhD; Sarah J. Seashols Williams, PhD; Baneshwar Singh, PhD*
4:35 p.m.	-	4:55 p.m.	**B88**	**A Multidisciplinary Effort to Identify the Cat Killer of Silicon Valley** *Jeremiah Garrido, BS*; Christina D. Lindquist, MS*; Michelle L. Bell, BA**
4:55 p.m.	-	5:10 p.m.		**Discussion**

Thursday—Session II

Multidisciplinary Session: Criminalistics II & Engineering & Applied Sciences

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

8:30 a.m.	-	8:45 a.m.	**B89**	**"A Gun Too Far"—Reconstruction of a Homicide** *Alexander Jason, BA**
8:45 a.m.	-	9:00 a.m.	**D29**	**Who Was Texting During the Alleged Kidnapping and Rape?** *Carole E. Chaski, PhD**
9:00 a.m.	-	9:15 a.m.	**B90**	**Crowbar Paints in Forensic Investigations With In-Depth Techniques: A Casework Investigation and the Start of a Multi-Technique Database** *Peter de Joode; Xiaoma Xu, PhD; Jill R. Klaasse; Maurice Olderiks; Zita Y. van Zanten; Gerard J.Q. van der Peijl, PhD**
9:15 a.m.	-	9:30 a.m.	**D30**	**Electrical Fire or Arson Crime?** *Helmut G. Brosz, BASc**
9:30 a.m.	-	9:45 a.m.	**B91**	**The Refinement and Application of a Kinetic Model to Predict the Evaporation of Gasoline for Fire Debris Analysis** *Amanda L. Setser, MS*; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
9:45 a.m.	-	10:15 a.m.	**D31**	**When Law Enforcement Relies on Some On-Board Vehicle Crash Data to Reconstruct a Crash Reconstruction in Criminal Prosecution, but the Overlooked Data is Exculpatory** *Billy S. Cox, Jr.**
10:15 a.m.	-	10:30 a.m.		**Break**
10:30 a.m.	-	10:45 a.m.	**B92**	**Photogrammetry Using Visible, Infrared, Hyperspectral, and Thermal Imaging of Crime Scenes** *Gerda Edelman; Maurice Aalders**
10:45 a.m.	-	11:00 a.m.	**D32**	**Spoliation: Wilfull Loss of Evidence Crime in an Electrocution Case** *Helmut G. Brosz, BASc**

11:00 a.m.	-	11:15 a.m.	**B93**	**Forensic Gait Analysis: The State of the Science and a Case Study** *Michael S. Nirenberg, DPM**
11:15 a.m.	-	11:30 a.m.	**B94**	**Interdisciplinary Forensic Investigations—Combining Evidence in Complex Cases** *Irene Kuiper; Jan A. De Koeijer, MD; Gerard J.Q. van der Peijl, PhD**
11:30 a.m.	-	12:00 p.m.	**D33**	**Criminal Engineering and Science Without Consequences: Why?** *David R. Bosch, PhD*; Mark C. Pozzi, MS*; Kenneth J. Saczalski, PhD*; Carley C. Ward, PhD; Parris Ward, JD*
12:00 p.m.	-	1:30 p.m.		**Lunch**

Explosives, Firearms, GSR I

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

1:30 p.m.	-	1:50 p.m.	**B95**	**See the Forest for the Trees: A Non-Targeted Approach to Discerning Exposure to Explosives Using Matrix-Assisted Laser Desorption/Ionization-Mass Spectrometry (MALDI-MS) and the Multivariate Statistical Model Random Forest** *Cameron M. Longo, BS*; Samira Beyramysoltan, PhD; Rabi A. Musah, PhD*
1:50 p.m.	-	2:10 p.m.	**B96**	**Smokeless Powder Additive Profiles and Compound-Specific Stable Isotope Signatures for Potential Brand Identification and Sample Discrimination** *Claire J. Page*; Ryan Schonert, MPS; Todd Sowers; Wayne Moorehead, MS; Jack Hietpas, PhD*
2:10 p.m.	-	2:30 p.m.	**B97**	**A Study of the Thermal Decomposition of Nitrate Ester Explosives by Gas Chromatography/Vacuum Ultraviolet Spectroscopy (GC/VUV) and Its Application to Post-Blast Debris** *Courtney Cruse, BS*; John V. Goodpaster, PhD*
2:30 p.m.	-	2:50 p.m.	**B98**	**An Update on the Academy Standards Board (ASB) Firearms and Tool Marks (FATM) Consensus Body** *Gregory E. Laskowski, MPA**
2:50 p.m.	-	3:10 p.m.	**B99**	**Forensic Implications of a New Polymer Bullet** *Peter J. Diaczuk, PhD*; Xiao Shan Law, MPS*
3:10 p.m.	-	3:30 p.m.		**Break**

Explosives, Firearms, GSR II

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

3:30 p.m.	-	3:50 p.m.	**B100**	**The Power of Statistics and Machine Learning Applied to Orthogonal Rapid Methods for the Identification of Inorganic Gunshot Residue (IGSR) and Organic Gunshot Residue(OGSR) Markers** *Korina Menking-Hoggatt, MS*; Colby E. Ott, MS; Courtney H. Vander Pyl, MS; Tatiana Trejos, PhD; James M. Curran, PhD**

3:50 p.m.	-	4:10 p.m.	**B101**	**The Characterization and Detection of Organic and Inorganic Firearm Discharge Residue (FDR) Using High-Performance Liquid Chromatography-Triple Quadrupole (HPLC-QQQ) and Host-Guest Chemistry** *William Feeney, BS*; Suzanne Bell, PhD; Luis E. Arroyo, PhD; Tatiana Trejos, PhD*
4:10 p.m.	-	4:30 p.m.	**B102**	**A Study on the Transfer of Gunshot Primer Residue (GSR) From Fabric to Other Surfaces** *Christopher P. Chany, MS*; Thomas R. White, BS*; Rebekah D. Lloyd, BS; Ashley Pittman, BS; Juan A. Rojas, BS*
4:30 p.m.	-	4:50 p.m.	**B103**	**The Relationship Between Terminal Velocity and Glass Fracture via .177 Caliber Steel BBs** *Jocenel J. Beach, BA*; Linda C. Rourke, MS; Peter J. Diaczuk, PhD*

Friday—Session I

Massive Parallel Sequencing and SNPs

Moderator: *Season E. Seferyn, MSFS*
Onondaga County Center for Forensic Sciences
Syracuse, NY

8:30 a.m.	-	8:45 a.m.	**B104**	**On the Migration Route: Challenges in the Forensic Application of Massively Parallel Sequencing (MPS) in Human Body Identification** *Lucija Barbaric*; Ivana Horjan, PhD; Adela Makar; Andrea Ledic, MS*
8:45 a.m.	-	9:00 a.m.	**B105**	**Advances in Microhaplotypes (Microhaps) as a Comprehensive Forensic Marker** *Fabio Oldoni, PhD; Leena Yoon, BS; Aishwaryaa Subramanian; Sathya Prakash Harihar; Drew A. Bader; Sharon C. Wootton, PhD; Robert Lagace, BS; Ryo Hasegawa, BS; Joseph P. Chang, BS; Kenneth Kidd, PhD; Daniele S. Podini, PhD**
9:00 a.m.	-	9:15 a.m.	**B106**	**Assessing the Reliability of Single Nucleotide Polymorphism (SNP) Micro-Array Data for Forensic Genealogy** *Robert A. Bever, PhD*; Jon Davoren, MS; Erin Sweeney, MS; Teresa Vreeland, BS; Mike Cariola, MFS*
9:15 a.m.	-	9:30 a.m.	**B107**	**Multi-Marker Match Statistics: Combining Results Across Sequence-Based Short Tandem Repeat (STR) and Identity Single Nucleotide Polymorphism (SNP) Markers** *Katherine B. Gettings, PhD*; Andreas Tillmar, PhD; Peter M. Vallone, PhD*
9:30 a.m.	-	9:45 a.m.	**B108**	**An Evaluation of the Illumina® Infinium™ Omni Express Exome Bead Chip for Forensic Testing** *Jon Davoren, MS*; Giovanna M. Vidoli, PhD; Amy Z. Mundorff, PhD*
9:45 a.m.	-	10:00 a.m.		**Break**

Forensic Biology

Moderator: *Baneshwar Singh, PhD*
Virginia Commonwealth University
Richmond, VA

10:00 a.m.	-	10:15 a.m.	**B109**	**DNA Storage Under Multiple Conditions** *Nicole S. Cusack, BS*; Laksh Malik*; Daniele S. Podini, PhD; Moses S. Schanfield, PhD*

10:15 a.m.	-	10:30 a.m.	**B110**	**Optimizing an Integrated Workflow for Processing Paper Evidence in a Multidiscipline Crime Laboratory** *Ashley Morgan, MS*; Patrick McLaughlin, BS; Mechthild K. Prinz, PhD*
10:30 a.m.	-	10:50 a.m.	**B111**	**Data Interpretation Guidelines for Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) -Based Forensic Proteomics** *Kristin Jarman, PhD*; Eric D. Merkley, PhD; Karen L. Wahl, PhD*
10:50 a.m.	-	11:05 a.m.	**B112**	**The Identification of Cadaver Liver Tissues Using Postmortem Transcriptome Biomarkers** *Gulnaz T. Javan, PhD; Sheree J. Finley, PhD*; Erin K. Hanson, PhD; Silvia D. Visona, MD; Antonio M.M. Osculati, MD; John Ballantyne, PhD*
11:05 a.m.	-	11:20 a.m.		**Break**

Y-STRs and Mitochondrial DNA

Moderator: Taylor M. Dickerson III, MSFS
SNA International
Dover Air Force Base, DE

11:20 a.m.	-	11:35 a.m.	**B113**	**An Analysis of Unusual Mutation Patterns in Father-Son Pairs Using a ForenSeq™ DNA Signature Prep Kit and a YFiler™ Plus Polymerase Chain Reaction (PCR) Amplification Kit** *Tyler L. McDermott, MS*; Robin W. Cotton, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
11:35 a.m.	-	11:55 a.m.	**B114**	**Mitochondrial Analysis of Challenging Samples Utilizing the ForenSeq™ mtDNA Control Region Solution on the MiSeq® FGx** *Ryan Gutierrez, BS; LeAnn M. Harrel, BS; Sheree R. Hughes, PhD; Rachel M. Houston, PhD; Bobby Larue, Jr., PhD**
11:55 a.m.	-	12:00 p.m.		**Discussion**
12:00 p.m.	-	1:00 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**B115**	**Investigator-Mediated DNA Transfer** *Michelle Le, BS*; Jason Moore, MA*; Steen Hartsen, BS; Georgina Jayne Lush*
11:30 a.m.	-	1:00 p.m.	**B116**	**An Assessment of Cell Suitability of Touch DNA Samples for Forensic DNA Profiling** *Jessica Surratt*; Claire L. Glynn, PhD*
11:30 a.m.	-	1:00 p.m.	**B117**	**How Sharing ChapStick® Influences DNA Profiles Obtained From the Rim of Ceramic Mugs** *Sidney Thompson, BA*; Mary Rebekah Judkins, BS; Laura K. Scheid, BA*; Emily Taner, BA; Krista E. Latham, PhD; Lindsey Williams, BS; Gay L. Bush, PhD*
11:30 a.m.	-	1:00 p.m.	**B118**	**The Evaluation of New Field and Laboratory Techniques for the Recovery of Touch DNA From Handled Improvised Explosive Devices (IEDs) Rendered Safe and Post-Blast** *Wyatt Barie*; Heather E. McKiernan, PhD; Alan Stuart, MS; Heather L. Harris, JD; Thomas V. Walsh, MSFS; Megan M. Foley, MSFS* *(FSF Emerging Forensic Scientist Award Poster Presentation)*

11:30 a.m. - 1:00 p.m. **B119** **Forensic Identification: An Investigation to Corroborate Volatile and Biological Profiles for Subject Identification**
Chantrell Frazier, BS; Kenneth G. Furton, PhD; DeEtta Mills, PhD*

11:30 a.m. - 1:00 p.m. **B120** **The Reproducibility of Individual DNA Deposits Detected With Diamond Dye**
Natalee Small-Davidson, BS; Xiao Chen, BS; Tebah Browne, BS; Mechthild K. Prinz, PhD*

11:30 a.m. - 1:00 p.m. **B121** **The Detection of Cryptic Single Nucleotide Polymorphism (SNP) Variants for Enhancing Human Identification Capabilities**
Leena Yoon, BS; Fabio Oldoni, PhD; Chiara Fantinato; Chantal Roth, PhD; Daniele S. Podini, PhD*

11:30 a.m. - 1:00 p.m. **B122** **Lectin Blot-Based Profiling of Salivary Fluid Glycoproteins Distinguishes Different Patterns Among Individuals**
*Oluseyi A. Vanderpuye, PhD**

11:30 a.m. - 1:00 p.m. **B123** **Electrochemical Screening of Synthetic Cannabinoids**
Miriam Barquero Quirós, PhD; Mario Molina Porras; Luis E. Arroyo, PhD; Jerson González, MS*

11:30 a.m. - 1:00 p.m. **B124** **Optimal Extraction of Fentanyl Volatile Organic Compounds (VOCs) for the Development of Canine Training Aid Mimics**
Leann Forte, BS; Kenneth G. Furton, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B125** **The Forensic Analysis of Temporary Tattoos**
*Erika Bravo, MS; Paige Cooper, MS; Thomas Kubic, JD, PhD; John Lombardi, PhD; Michelle D. Miranda, PhD**

11:30 a.m. - 1:00 p.m. **B126** **The Calculation of Calibrated Likelihood Ratios (LRs) for Glass Using a Multivariate Kernel Density Model: Introducing a User-Friendly Graphical User Interface (GUI)**
Anuradha G. Akmeemana, PhD; Ruthmara Corzo, PhD; Jose R. Almirall, PhD*

11:30 a.m. - 1:00 p.m. **B127** **An Evaluation of Materials for Documenting Injuries From Blunt and Sharp Implements**
*Sienna S. Brown; Judy Melinek, MD**

11:30 a.m. - 1:00 p.m. **B128** **An Analysis of Amino Acids in Latent Fingerprints Using Gas Chromatography/Mass Spectrometry (GC/MS)**
Shokouh Haddadi, PhD; Shelby N. Barnes; Jenna M. Covey*

11:30 a.m. - 1:00 p.m. **B129** **High-Throughput Screening of Drugs of Abuse Using a Robust Thermal Extraction Ionization Source (TEIS)**
Pierre Negri, PhD; Oscar G. Cabrices, PhD; Neil Davenport; Ashley Sage; Peter Luke; Carl Fletcher*

11:30 a.m. - 1:00 p.m. **B130** **Pepper Plants and Magic Mint—The Application of Ambient Mass Spectral Analysis for the Rapid Detection and Quantification of Psychoactive Compounds in the Complex Matrices of Plant-Based Legal-High Substances**
Megan I. Chambers, BS; Amy M. Osborne, BS; Justine E. Giffen, BS; Rabi A. Musah, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B131** **A Trace Elemental Analysis of Aluminum Flake Particles in Automotive Metallic Paints for Traffic Accident Investigation Using Synchrotron Radiation Micro X-Ray Fluorescence Spectrometry (μ-SR-XRF)**
*Yoshinori Nishiwaki**

11:30 a.m. - 1:00 p.m. **B132** **Optimization of the Forensic Identification of Blood Using Surface-Enhanced Raman Spectroscopy (SERS)**
Miranda L. Shaine, BS; Richard S. Andino, PhD; Ranjith Premasiri, PhD; Harrison Ingraham, BS; Amy N. Brodeur, MFS; Lawrence Ziegler, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B133** **A Chemical Analysis of Gunshot Residues (GSRs) for Investigative Leads and Reconstruction of Firearm-Related Incidents**
Courtney H. Vander Pyl, MS; Oriana Ovide; Colby E. Ott, MS; Luis E. Arroyo, PhD; Tatiana Trejos, PhD*

11:30 a.m. - 1:00 p.m. **B134** **Silicone-Based, Cost-Effective Alternatives to Traditional Casting Material for Large-Scale Impressions**
Ashley E. Haas, BS; Mousa Alzubi; Ryan M. Rezzelle, MFS; Melissa M. Bailey, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **B135** **Integrating Undergraduate Mini-Research Project Exercises in Advanced Forensic Science Curriculum as a Course-Based Undergraduate Research Experience (CURE)**
Sulekha Coticone, PhD; Lora Bailey Van Houten, MS**

11:30 a.m. - 1:00 p.m. **B136** **Bode Armor™: A Developmental Validation of a Robust Preservative Solution**
Allie Flores, BS; Robert A. Bever, PhD; Daniel Watsula, MS*

11:30 a.m. - 1:00 p.m. **B137** **Fiber Sampling Effects on the Detection of Fluorinated Coatings Studied by Pyrolysis-Gas Chromatography-Plasma-Assisted Reaction Chemical Ionization-Mass Spectrometry (Py-GC-PARCI-MS)**
Michael J. Dolan, Jr., MS; Wanqing Li; Kaveh Jorabchi, PhD*

11:30 a.m. - 1:00 p.m. **B138** **Automated High-Throughput Potency Testing of Cannabis Samples Using Gas Chromatography/Mass Spectrometry (GC/MS) in a Forensic Lab**
Kevin W.P. Miller, PhD; Kaylee R. Mastrianni, PhD; Melissa T. Horne, BS; Rachel Hardy, BS; Elissa Renneker, BS*

11:30 a.m. - 1:00 p.m. **B139** **Complex Mixtures Made Suitable for Interpretation Using Probabilistic Genotyping**
*Christina Hayes Nash, MS**

11:30 a.m. - 1:00 p.m. **B140** **The Detection of Volatile Organic Compounds (VOCs) Released From Mass Storage Devices Utilizing Headspace/Solid-Phase Microextraction (HS/SPME) and Its Implications for Canine Training and Contraband Detection**
Kelvin J. Frank, Jr., BS; Kenneth G. Furton, PhD*

11:30 a.m. - 1:00 p.m. **B141** **Indole and Related Non-Volatile Compound Release From Decomposing Mammalian Liver Homogenate**
Hayley K. Murphy, BS; Virginia M. Maxwell, DPhil; Robert H. Powers, PhD*

11:30 a.m. - 1:00 p.m. **B142** **A Simultaneous Chiral Analysis of Methamphetamine and Related Precursors and Screening of Methamphetamine-Related Organic Impurities in Seized Drugs by a Small Footprint Ultra High-Performance Liquid Chromatography-Photodiode Array/Mass Spectrometry (UHPLC-PDA/MS) System**
*Li Li, PhD**

11:30 a.m. - 1:00 p.m. **B143** **The Differentiation Between Industrial Hemp and Marijuana Through Colorimetry, Spectroscopy, and Volatile Organic Compound (VOC) Profiles**
Alexander Acosta; Jose R. Almirall, PhD*

11:30 a.m. - 1:00 p.m. **B144** **An Analysis of Gaseous Mixture Adsorption by Nuclear Magnetic Resonance (NMR) Spectroscopy: Improving Our Understanding of Arson Debris Investigations**
Christopher L. Suiter, PhD; Jason A. Widegren, PhD; Megan Harries, BS; Kavita M. Jeerage, PhD; Tara Lovestead, PhD*

11:30 a.m. - 1:00 p.m. **B145** **The Validation of Gas Chromatography With Flame Ionization Detection (GC/FID) and Development of a Method to Quantitate Δ9-Tetrahydrocannabinol (THC)**
Cara E. Hazen, BS; Sandra Salido, PhD; Lauren L. Richards-Waugh, PhD; Brandon P. Jones, MS*

11:30 a.m. - 1:00 p.m. **B146** **The Easy Application of Chemometrics to Forensic Chemical Data: A Software Tool for Forensic Chemists**
Tuomas Salonen, MS; Michael Bovens, PhD; Björn Ahrens, PhD; Anders Nordgaard, PhD; Sami Huhtala, MS; Ivo Alberink, PhD*

Bones and Hair

Moderator: Stephen K. Gicale, MSFS
Forest Park, GA

1:00 p.m. - 1:15 p.m. **B147** **DNA Extraction and Profiling From Human Bone and Tooth Samples Exposed to High Temperatures: A Comparison of Current Techniques**
Kadir Dastan, PhD; Melek O. Kolusayin, PhD; Gulten Rayimoglu; Ömer Karatas; Fatma Cavus Yonar, PhD; Emel H. Yükseloglu*

1:15 p.m. - 1:30 p.m. **B148** **DNA Analysis From Human Skeletal and Tooth Remains: A Comparison of the Recent Isolation Methods for Removing Polymerase Chain Reaction (PCR) Inhibitors**
Kadir Dastan, PhD; Melek O. Kolusayin, PhD; Gulten Rayimoglu; Fatma Cavus Yonar, PhD; Ömer Karatas; Emel H. Yükseloglu*

1:30 p.m. - 1:45 p.m. **B149** **DNA Profiling of Rootless Hair Shafts Utilizing Massively Parallel Sequencing and Bi-Allelic Assays**
Ryan Gutierrez, BS; Bobby Larue, Jr., PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:45 p.m. - 2:00 p.m. **B150** **Examining Various Methods to Extract and Amplify Degraded DNA**
Emily Spack, BS; Heather Sarik, MS; Jon Davoren, MS; Kristen Naughton, BS*

2:00 p.m. - 2:15 p.m. **Break**

Probabilistic Genotyping

Moderator: Lisa M. Burdett, MS
Kansas Bureau of Investigation
Great Bend, KS

2:15 p.m. - 2:30 p.m. **B151** **The Benefits and Burdens of Implementing Probabilistic Genotyping (PG) Software**
Roger Kahn, PhD; Joseph Truppi, BS; Priscilla A. Hill, MS; Michael A. Donley, MS; Katherine Welch, MS*

2:30 p.m.	-	2:55 p.m.	**B152**	**The Use of Relationship Likelihood Ratios (LRs) as a Diagnostic for Probabilistic Genotyping: Validation and Casework Experience Through the Years** *Samantha Orans Wandzek, MS*; Alicia M. Cadenas, MS; Rachel H. Oefelein, MSc; Cristina L. Rentas, MFS; Daniel I. Aguilar, MS*
2:55 p.m.	-	3:10 p.m.		**Break**

Sexual Assaults

Moderator: *Cyndi Hall, MS*
Idaho State Police
Meridian, ID

3:10 p.m.	-	3:25 p.m.	**B153**	**Six Months to 30 Days in 24 Hours: A Laboratory's Journey to Meet Statutory Requirements Relative to Sexual Assault Evidence Collection Kit (SAECK) Processing** *Lynn A. Schneeweis, MS*; Stefany E. Harman, MS; Darina A. Griffin, JD; Kristen Sullivan, MS*
3:25 p.m.	-	3:40 p.m.	**B154**	**An Exploration of EDTA Detection Within Forensically Relevant Blood Samples** *Brittany C. Hudson, MS*; Matthew C. Rodriguez, BS; Catherine Cupples Connon, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
3:40 p.m.	-	3:55 p.m.	**B155**	**A Longevity Study on the Analysis of Sexual Lubricants When Stored in Different Environmental Conditions** *Brooke R. Baumgarten, MS*; Candice Bridge, PhD; Mark Maric, PhD; Nancy Flynn, BS* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
3:55 p.m.	-	4:10 p.m.		**Break**

Education in Forensic Science

Moderator: *Pamela L. Marshall, PhD*
Duquesne University
Pittsburgh, PA

4:10 p.m.	-	4:30 p.m.	**B156**	**Forensic Education Needs for Local and Federal Hiring Managers From Job Applicants** *Sandra B. Sachs, PhD*; Thomas M. Blackwell, BS*; Scott R. Oulton, BS**
4:30 p.m.	-	4:50 p.m.	**B157**	**Expert Forensic Testimony Training for Non-Analysts** *David Jackson, MSc**
4:50 p.m.	-	5:05 p.m.	**B158**	**Crime Scene Transformation: Helping Evidence Tell Its Story** *Kaitlin Main, MA*; Peter R. Stout, PhD; Jerry Pena, CPA*
5:05 p.m.	-	5:20 p.m.	**B159**	**Are Forensic Science Programs Meeting the Current and Future Needs of Prospective Employers?** *Ruth Waddell Smith, PhD*; Glen P. Jackson, PhD**
5:20 p.m.	-	5:30 p.m.		**Discussion**

Criminalistics Believe It or Not!

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

Co-Moderator: *Jason L. Linder, MFS*
Nebraska State Patrol
Lincoln, NE

7:00 p.m. - 9:00 p.m. **Criminalistics Believe It or Not!**

Please set aside some time Friday evening to join the casual Criminalistics Believe It or Not! session. The evening is intended to be an informal, entertaining, yet informative session; past presentations have regaled crowds with stories of bullets and explosions going awry, investigations of the same, how hair played a pivotal role in a case, unique or historical evidence substrates, koalas, the forensic story of capturing the Golden State Killer, interesting drug submissions, cats at crime scenes, the arc of building a case in court, and dare it be said, poop!

Just like last year, this year's list of Believe It Or Not! speakers, as well as the subject matter of each presentation, will be kept under wraps until the last minute to keep our attendees in suspense.

After the more serious science has finished for the day, come and listen to your friends and colleagues share stories of their forensic (mis)adventures. If you've ever found yourself with nothing to do on the Friday night before the end of the annual meeting, this session is for you!

Friday—Session II

Latent Print I

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

8:30 a.m. - 8:45 a.m. **B160** **Ridge Drift: The Relevance of a Not-So-Rare Fingermark Aging Phenomenon**
Josep De Alcaraz-Fossoul, PhD; Katherine A. Roberts, PhD; Cathy Johnson, MS; Carme Barrot, PhD; Ryan Tully-Doyle, PhD; Brooke W. Kammrath, PhD*

8:45 a.m. - 9:00 a.m. **B161** **Accelerated Development of Latent Prints on Thermal Papers**
Brent M. Allred, PhD; Emily Brisson, BS; Anthony Koertner, MS; Kalisha Gill, BS*

9:00 a.m. - 9:15 a.m. **B162** **A Microfluidic Device for the Identification of Biological Sex by Analysis of Fingermarks**
Jamila S. Marshall Roberts, MS; James P. Landers, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

9:15 a.m. - 9:30 a.m. **B163** **Analyzing Latent Print Chemistry Using 2D Gas Chromatography**
Jessica H. Kindell, BS; Candice Bridge, PhD*

9:30 a.m. - 9:45 a.m. **B164** **Lessons Learned From Conducting Black-Box Evaluations in Multiple Disciplines**
R. Austin Hicklin, PhD; JoAnn Buscaglia, PhD**

9:45 a.m. - 10:00 a.m. **B165** **Using a Smart Phone Special Gadget to Find and Collect Latent Fingerprints: Simplifying the Process**
Maryah E.M. Haertel; Eduardo J. Linhares; André L. Melo*

10:00 a.m.	-	10:15 a.m.	**B166**	**A Cyanoacrylate Chamber for Vehicles: Innovation and Astonishing Results in Brazilian Casuistry** *Angela T. Oliveira, MS*; Arthur P. Vidal; Ayeska E. Maia; Cecília V. Jacintho; Débora H. Kist; Diana W. Moraes; João G. Souza Neto; Kenio W. Tida; Laura P. Macedo; Leandro S. Faria; Luana D. Batista; Osmar S. Oliveira Neto, MS; Marco A. Paulino*
10:15 a.m.	-	10:30 a.m.	**B167**	**Fingerprints and Ancestry: Is It in the Details?** *Jessica R. Ford** *(FSF Emerging Forensic Scientist Award Oral Presentation)*
10:30 a.m.	-	10:45 a.m.		**Break**

Latent Print II/Impressions

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

10:45 a.m.	-	11:00 a.m.	**B168**	**The Formation and Examination of Bloody Friction Ridge Patterns on Common Textile Materials Using Different Enhancement Techniques** *Kaitlyn Chetney*; Ralph R. Ristenbatt III, MS*
11:00 a.m.	-	11:15 a.m.	**B169**	**Fingerprint Error Rate on Close Non-Matches (CNMs)** *Jonathan J. Koehler, PhD*; Shiquan Liu, PhD*
11:15 a.m.	-	11:30 a.m.	**B170**	**Testing the Accuracy and Reliability of Palmar Friction Ridge Comparisons: A Black Box Study** *Heidi Eldridge, MS*; Marco De Donno; Christophe Champod, PhD**
11:30 a.m.	-	11:45 a.m.	**B171**	**Unusual Fingerprint Patterns in a North Indian Population—Implications in Forensic Casework and Fingerprint Research** *Neha Baryah, MS*; Kewal Krishan, PhD*
11:45 a.m.	-	12:00 p.m.	**B172**	**Do We Understand the Factors That Influence Fingermark Detection?** *Sebastien Moret, PhD*; Xanthe Spindler, PhD; Scott Chadwick, PhD; Christopher J. Lennard, PhD; Claude Roux, PhD*
12:00 p.m.	-	12:15 p.m.	**B173**	**A Comparison of 2D Footwear Images Using Maximum Clique (MC) and Speeded-Up Robust Features (SURFs)** *Soyoung Park, MS; Alicia L. Carriquiry, PhD**
12:15 p.m.	-	12:30 p.m.	**B174**	**Estimating the Probability of Randomly Acquired Characteristics (RACs) Locations on a Shoe Sole** *Naomi Kaplan-Damary, PhD*; Micha Mandel, PhD; Yoram Yekutieli, PhD; Sarena Weisner, MS; Yaron Shor, MS* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
12:30 p.m.	-	1:45 p.m.		**Lunch**

Ignitable Liquid Residue Analysis I and Related Models

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

1:45 p.m. - 2:00 p.m. **B175** **The Effects of Elevated Temperatures and Substrates on the Weathering of Ignitable Liquids**
Caitlyn Wensel, BS; Isaac Willis, BS; Zilin Fan, PhD; J. Tyler Davidson, MS; Glen P. Jackson, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

2:00 p.m. - 2:15 p.m. **B176** **The Utilization of Portable Gas Chromatographic (GC) Systems Coupled With Capillary Microextraction of Volatiles (CMV) for On-Site Detection of Ignitable Liquid Residues (ILRs)**
Michelle N. Torres, BS; Nicole Valdes, BA; Jose R. Almirall, PhD*

2:15 p.m. - 2:35 p.m. **B177** **The Benefits of High-Resolution Mass Spectrometry for the Identification of Ignitable Liquids**
Haylea Debolt; Frank Dorman, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

2:35 p.m. - 2:55 p.m. **B178** **A Foundational Study of Fire Debris Interpretation Using Quantitative Measures of Chromatographic Features**
Brenda B. Christy, MS; Reta Newman, MA; Kelsey R. Winters, MSFS; Alexandria Rossheim, MS*

2:55 p.m. - 3:15 p.m. **B179** **Human Scent Biometrics: Paving a Path Toward Improved Data Analysis**
Vidia A. Gokool, BS; Howard K. Holness, PhD; Kenneth G. Furton, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:15 p.m. - 3:30 p.m. **Break**

Ignitable Liquid Analysis II With Pyrolysis Applications and Wood Analysis

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

3:30 p.m. - 3:50 p.m. **B180** **The Practical Application of a Kinetic Model to Generate Predicted Reference Collection for the Identification of Ignitable Liquids in Fire Debris Samples**
Briana A Capistran, BA; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:50 p.m. - 4:10 p.m. **B181** **Expert System for Characterization Using AMDIS Plus Excel® (Escape): Connecting Cultural Heritage Research to Trace Evidence Analysis by Pyrolysis-Gas Chromatography/Mass Spectrometry (Py-GC/MS)**
Michael R. Schilling, MS; Kristina Fritz, BS*; Steven D. Phillips, BS*

4:10 p.m. - 4:30 p.m. **B182** **A Comparison of Direct Analysis in Real-Time High Resolution Mass Spectrometry (DART®-HRMS) and Pyrolysis-Gas Chromatography/Mass Spectrometry (Py-GC/MS) in Automotive Paint Analysis**
Kaitlin Jones, BS; Mark Maric, PhD; Candice Bridge, PhD*

4:30 p.m. - 4:50 p.m. **B183** **Barking Up the Wrong Tree: Detection and Identification of Illegally Traded Endangered Species of Wood Using Mass Spectral Techniques**
Meghan Fogerty, MS; Rabi A. Musah, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

Friday—Session III

Drugs I

Moderator: *Jason L. Linder, MFS*
Nebraska State Patrol
Lincoln, NE

8:30 a.m. - 8:45 a.m. **B184** **The Contamination of Homes With Methamphetamine: Are Current Assessment and Remediation Approaches Adequate?**
Stewart Walker, PhD; Kirstin Ross, PhD; Jackie Wright, PhD*

8:45 a.m. - 9:00 a.m. **B185** **Multivariate Statistics for the Masses: A Novel, User-Friendly Method for Positional Isomer Differentiation Using Mass Spectral Data**
*Jennifer Bonetti, MS**

9:00 a.m. - 9:15 a.m. **B186** **On-Scene Detection of Low-Dose Fentanyl Tablets**
Pauline E. Leary, PhD; Sarah M. Davis, BS; M. Isabel Sanchez-Melo, MS; Leah Rynearson, BS; Lauren Vallee, BS; Emily Langlois; Zachary Lawton, MS; Koby Kizzire, PhD; Brooke W. Kammrath, PhD*

9:15 a.m. - 9:30 a.m. **B187** **WITHDRAWN**

9:30 a.m. - 9:45 a.m. **B188** **On the Fragmentation Behavior of Fentanyl and Its Analogs in Electrospray Ionization-Tandem Mass Spectrometry (ESI-MS/MS)**
J. Tyler Davidson, MS; Zachary J. Sasiene, BS; Younis F. Abiedalla, PhD; Randall Clark, PhD; Jack DeRuiter, PhD; Glen P. Jackson, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

9:45 a.m. - 10:00 a.m. **B189** **The Detection and Identification of Synthetic Cannabinoids by Portable Nanoflow Liquid Chromatography-Ultraviolet (LC-UV) Detection**
David C. Pavone, BS; Marisa C. May, BS; Ira S. Lurie, PhD*

10:00 a.m. - 10:30 a.m. **Break**

Drugs II

Moderator: *Jason L. Linder, MFS*
Nebraska State Patrol
Lincoln, NE

10:30 a.m. - 10:45 a.m. **B190** **2020 Update From the Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG)**
*Sandra E. Rodriguez-Cruz, PhD**

10:45 a.m. - 11:00 a.m. B**191** **Qualitative and Quantitative Characterization of Complex Samples Containing Fentanyl From Supervised Consumption Sites Using Quantitative Nuclear Magnetic Resonance (qNMR) and a Multi-Component Multiple Resonance Post-Processing Quantitative Algorithm**
*Richard R. Laing, MS**

11:00 a.m. - 11:15 a.m. **B192** **An Examination of Fentanyl and Fentanyl Analog Samples in Canada: Trends and Strategies for Analysis**
*Michelle Boileau, PhD**

11:15 a.m. - 11:30 a.m. **B193** **Using Silica-Hydride-Based Stationary Phases for Dual-Mode Ultra High Performance Liquid Chromatography (UHPLC) Separation of Synthetic Cathinone Positional Isomers**
Carly Ploumen, BS; Ioan Marginean, PhD; Ira S. Lurie, PhD*

11:30 a.m. - 11:45 a.m. **B194** **An Analysis of Emerging Benzodiazepines by Thermal Desorption/Direct Analysis in Real Time-Mass Spectrometry (TD/DART®-MS)**
Sydney Jones, BS; Edward Sisco, PhD; Ioan Marginean, PhD*

11:45 a.m. - 1:00 p.m. **Lunch**

Drugs III

Moderator: *Jason L. Linder, MFS*
Nebraska State Patrol
Lincoln, NE

1:00 p.m. - 1:15 p.m. **B195** **A Comparison of Expected Drug and Confirmed Findings in Samples Submitted by Clients of Supervised Consumption Sites in British Columbia**
Aaron M. Shapiro, PhD; Kenneth Tupper, PhD; Christopher Mill, MS; Samuel Tobias, MS; Olanrewaju Kayode, BS; Priya Patel, MPH; Lianping Ti, PhD*

1:15 p.m. - 1:30 p.m. **B196** **Identifying Powdered Illicit Drugs Using Magneto-Archimedes Levitation (MagLev), Signal Processing, and Digital Finger Printing**
Christoffer K. Abrahamsson, PhD; Markus P. Nemitz, PhD; Michael J. Fink, PhD; Daniel J. Preston, PhD; Joe Bozenko, MSc*; George Whitesides, PhD*

1:30 p.m. - 1:45 p.m. **B197** **Machine-Learning (ML) Approaches for Source Attribution of Forensic-Relevant Materials**
Josh Dettman, PhD; Amanda M. Casale*

1:45 p.m. - 2:00 p.m. **B198** **A Regression-Based Algorithm to Maximize the Confidence in Mass Spectral Identifications**
Samantha A. Mehnert; Brandon D. Lowe; Emily Ruiz; J. Tyler Davidson, MS; Glen P. Jackson, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

2:00 p.m. - 2:15 p.m. **B199** **Detection and Differentiation of Derivatized Controlled Substances by Gas Chromatography-Vacuum Ultraviolet (GC-VUV) Spectrophotometry**
Zackery Ray Roberson, BS; Heather C. Gordon; John V. Goodpaster, PhD*

Saturday—Session I

Drugs IV

Moderator: *Jason L. Linder, MFS*
Nebraska State Patrol
Lincoln, NE

8:30 a.m. - 8:45 a.m. **B200** **An Evaluation of Four Fentanyl Colorimetric Testing Options for Field Use**
Michelle Cerreta, PhD; Brian A. Green, BS; Maolin Li*

8:45 a.m. - 9:00 a.m. **B201** **Investigating the Robustness of a Statistical Method to Compare Mass Spectra of Fentanyl Analogs**
Hannah Clause, BS; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

9:00 a.m. - 9:15 a.m. **B202** **The Differentiation and Identification of Fentanyl Analogs Using Gas Chromatography Interfaced With an Infrared Detector (GC/IRD)**
Agnes D. Winokur, MS; Lindsay M. Kaufman, BS; Jose R. Almirall, PhD*

9:15 a.m. - 9:30 a.m. **B203** **Data Mining the War on Drugs From Incarceration to Rehabilitation in Oklahoma**
Ruthie O. Kennedy; Kathleen E. Brown; Joselina Cheng, PhD; Rhonda C. Williams, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

9:30 a.m. - 9:45 a.m. **B204** **An Advanced Extraction Method for Cyanide Metabolite Using Magnetic Carbon Nanotubes Facilitated Dispersive Micro Solid Phase Extraction (Mag-CNT/d-µSPE)**
Sun Yi Li, BS; Jorn Chi-Chung Yu, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

9:45 a.m. - 10:00 a.m. **B205** **Direct Analysis in Real-Time Mass Spectrometry (DART®-MS) and Atmospheric Solids Analysis Probe/Mass Spectrometry (ASAP/MS) for the Detection and Analysis of Seed-Based Toxins**
Edward Sisco, PhD; Natalie Damaso, PhD; Elizabeth Robinson, MS; James M. Robertson, PhD*

10:00 a.m. - 10:15 a.m. **Break**

Drugs V

Moderator: *Jason L. Linder, MFS*
Nebraska State Patrol
Lincoln, NE

10:15 a.m. - 10:30 a.m. **B206** **The Determination of Total Tetrahydrocannabinol (THC) Concentration in Plant Material Via High Performance Liquid Chromatography With Ultraviolet Visible Diode Array Detection (HPLC-UV DAD)**
Stephanie Olofson, MS; Kaitlin A. Schroeder, MS*

10:30 a.m. - 10:45 a.m. **B207** **High-Performance Thin-Layer Chromatography (HPTLC) Densitometric Analysis of Cannabinoids in *Cannabis sativa* L.**
Yifan Liu; Thomas A. Brettell, PhD; Matthew R. Wood, PhD; Marianne E. Staretz, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:45 a.m. - 11:00 a.m. **B208** **A New Analytical Scheme for the Analysis of Cannabis Plant Material: Marijuana or Hemp?**
*Sandra E. Rodriguez-Cruz, PhD**

11:00 a.m. - 11:15 a.m. **B209** **Forty-Plus Ways Not to Analyze Beverages for Cannabinoids**
Carl E. Wolf II, PhD; Hedi L. Brightman, BS; Justin L. Poklis, BS; Wiliam J. Korzun, PhD*

11:15 a.m. - 11:30 a.m. **B210** **An Analysis of Illicit Drugs by Portable Ion-Trap Gas Chromatography/Mass Spectrometry (GC/MS)**
Leah Rynearson, BS; Zachary Lawton, MS; Meghann McMahon, MS; Pauline E. Leary, PhD; Koby Kizzire, PhD; Brooke W. Kammrath, PhD*

11:30 a.m. - 11:45 a.m. **B211** **New Psychoactive Substances in Forensic Drug Cases: Crossing the Borders of Gas Chromatography/Mass Spectrometry (GC/MS) Selectivity**
Ruben F. Kranenburg, MS; Arian C. Van Asten, PhD*

Saturday—Session II

Trace I

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

8:30 a.m. - 8:50 a.m. **B212** **Implementing Raman Spectroscopy as a Tool to Characterize Sexual Assault Lubricants**
Santana A.L. Thomas, PhD; Nicholas Andersen; Mark Maric, PhD; Candice Bridge, PhD*

8:50 a.m. - 9:10 a.m. **B213** **Assessing the Value of a Physical End Match in Trace Evidence: A Comparison of Human-Based and Computational-Based Approaches**
Meghan Prusinowski, MS; Evie K. Brooks, BS; Pedram Tavadze, MS; Aldo Romero, PhD; Tatiana Trejos, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

9:10 a.m. - 9:30 a.m. **B214** **A Survey of Elements Detected in Automotive Paint Layers by Scanning Electron Microscope/Energy Dispersive X-Ray Spectrometry (SEM/EDS)**
Christopher S. Palenik, PhD; Ethan Groves, BS; Lina Michely, PhD; Yu Chen Lim, MS; Skip Palenik, BS*

9:30 a.m. - 9:50 a.m. **B215** **Parameter Optimization and Validation for Qualitative Elemental Analysis of Electrical Tape Backings by X-Ray Fluorescence (XRF)**
Evie K. Brooks, BS; Andria H. Mehltretter, MSFS; Susan M. Marvin, PhD; Tatiana Trejos, PhD*

9:50 a.m. - 10:00 a.m. **Break**

Trace II/Thanatochemistry at Scene

Moderator: *Sandra B. Sachs, PhD*
Oakland Police Department
Oakland, CA

10:00 a.m. - 10:20 a.m. **B216** **A Quantitative Trace Elemental Analysis of Aluminum Materials for Forensic Discrimination**
Michelle Jordan; Christopher P. Saunders, PhD; JoAnn Buscaglia, PhD*

10:20 a.m. - 10:40 a.m. **B217** **Vibrational Spectroscopic Analysis of 3D-Printed Polymers Pre- and Post-Manufacturing**
Ryan G. Zdenek; April Bowen, BS; John A. Reffner, PhD; Maria-Isabel Carnasciali, PhD; Brooke W. Kammrath, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

10:40 a.m. - 11:00 a.m. **B218** **Non-Destructive Separation of Pollen Grain Constituents for Biochemical Analysis**
Bryan McCullough; Luz J. Kelley, MS; Gerardo Sibaha, BS; Kayley Jenks, BS; Matthieu Baudelet, PhD; Mauro Martinez Labrador, MPh*

11:00 a.m. - 11:20 a.m. **B219** **Thanatochemistry at the Crime Scene: A Microfluidic Paper-Based Device for Ammonium Analysis in the Vitreous Humor**
Giacomo Musile, PhD; Yvane Agard, MS; Elio De Palo; Ksenia Shestakova, MS; Federica Bortolotti, PhD, MD; Franco Tagliaro, PhD, MD*

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**C1**	**The Development of a Cleaning Protocol for Mobile Devices Damaged by Fire** *Caige McCabe, BS*; Josh Brunty, MS; Lauren L. Richards-Waugh, PhD; Dale Mosley*
11:30 a.m.	-	1:00 p.m.	**C2**	**Ear Asymmetry—A Preliminary Evaluation of Identification Accuracy for Forensic Purposes** *Laura Donato*; Al Ozonoff, PhD; Alessandro Di Luca, MD*
11:30 a.m.	-	1:00 p.m.	**C3**	**An Investigation Into the Encoding and Encryption of Black Box Data on a DJI Spark** *Elijah A. Vela*; Josh Brunty, MS; Dale Mosley; Rob Attoe, BS*

Thursday

Interfaces: Finding the Borders I

Moderator: *Eddy B. Brixen, BA*
EBB-Consult
Smorum, DENMARK

Co-Moderator: *Douglas R. White, MS*
National Institute of Standards and Technology
Gaithersburg, MD

8:30 a.m.	-	8:35 a.m.		**Welcome** *Marla E. Carroll, BS*
8:35 a.m.	-	8:55 a.m.	**C4**	**The Organization of Scientific Area Committees (OSAC) Digital/Multimedia Scientific Area Committee Standards Work—Part 1: Digital Evidence and Video/Imaging Technology and Analysis (VITAL)** *Julie A. Carnes*; Steven B. Watson, BA*; Christina A. Malone, MSFS; Richard Vorder Bruegge, PhD*
8:55 a.m.	-	9:15 a.m.	**C5**	**The Organization of Scientific Area Committees (OSAC) Digital/Multimedia Scientific Area Committee Standards Work—Part 2: Facial Identification and Speaker Recognition** *Lora Sims*; David Brian Marks, MS*; Richard Vorder Bruegge, PhD; Jane Wankmiller, PhD; Steven B. Lee, PhD; Mark Dolfi*
9:15 a.m.	-	9:35 a.m.	**C6**	**On Generic Digital Forensic Readiness** *Martin S. Olivier, PhD**
9:35 a.m.	-	9:50 a.m.	**C7**	**The National Institute of Standards and Technology (NIST) Scientific Foundation Study for Digital Examiners** *Barbara Guttman, BA*; Mary T. Laamanen, MS*; Craig Russell, MS*
9:50 a.m.	-	10:00 a.m.		**Break**

Implementation: Mobile Borders I

Moderator: *Tanveer A. Zia, PhD*
Charles Sturt University
Wagga Wagga, AUSTRALIA

Co-Moderator: *Jason M. Paroff, JD*
Epiq Systems, Inc
New York, NY

10:00 a.m. - 10:15 a.m.	**C8**	**Attitudes of Citizens of the United States, the United Kingdom, and Turkey in Permits Requested by Mobile Apps** *Burak Oclu, MS*; Dilara Oner, MS; Hande Ermis, MS; Gursel Cetin, PhD*
10:15 a.m. - 10:35 a.m.	**C9**	**Apple® iCloud® Message Sync Forensic Investigations and Artifacts** *Andrew N. Crouse, BA*; Kaylee A. Schoepe, BS*; Brian Smith, BS; Wesley Wong, BA*
10:35 a.m. - 10:55 a.m.	**C10**	**Joint Task Action Group (JTAG) and Chip-Off Data Analysis and Testing** *Jenise Reyes-Rodriguez, BS*; Richard Ayers, MS*
10:55 a.m. - 11:10 a.m.	**C11**	**Forensic Gait Analysis: A Strength of Evidence Evaluation From Closed-Circuit Television (CCTV) Footage** *Dilan Seckiner*; Claude Roux, PhD; Xanthe Mallett, PhD; Philip Maynard, PhD; Didier Meuwly, PhD*
11:10 a.m. - 11:25 a.m.	**C12**	**An Acceptable Resolution for the Identification of Knives Captured Within Closed-Circuit Television (CCTV) Imagery** *James Zjalic, MSc**
11:25 a.m. - 11:40 a.m.	**C13**	**Unlocking Apple® Mobile Devices: A Forensic Practitioner's Perspective and Lessons Learned** *Christina A. Malone, MSFS*; Joseph Levi White, MS**
11:40 a.m. - 12:00 p.m.	**C14**	**2D/3D Imaging for Forensic Ballistics Comparison Assessment** *Sebastiano Battiato, PhD*; Oliver Giudice, PhD*; Luca Guarnera, MS*; Antonino Barbaro Paratore, MS*; Angelo Salici**
12:00 p.m. - 1:00 p.m.		**Lunch**

Poster Session

11:30 a.m. - 1:00 p.m.	**C15**	**A Morphometric Analysis of Ears in Twins: An Aid to Forensic Personal Identification** *Greta Cena, MD*; Francesco Lupariello, MD*; Niccolò D. Melloni, MD; Giancarlo Di Vella, MD, PhD**
11:30 a.m. - 1:00 p.m.	**C16**	**The Development of a Cleaning Protocol for Mobile Devices Contaminated With Controlled Substances** *Rachel Valerio*; Josh Brunty, MS; Lauren L. Richards-Waugh, PhD; Dale Mosley*

Identification: Borders of Intelligence I

Moderator: *Joseph Levi White, MS*
Defense Forensic Science Center
Forest Park, GA

1:00 p.m.	-	1:20 p.m.	**C17**	**The Application of Artificial Intelligence (AI) in Digital Forensic Science** *Zeno J. Geradts, PhD**
1:20 p.m.	-	1:35 p.m.	**C18**	**Cloth Classification With a Semi-Supervised Generative Adversarial Network (SGAN)** *Jette Korthals Altes, BS; Andrea Macarulla, MSc; Owen Corrigan, PhD; Zeno J. Geradts, PhD**
1:35 p.m.	-	1:55 p.m.	**C19**	**A Wild Manhunt for Stego Images Created by Mobile Apps** *Li Lin*; Wenhao Chen, BS; Stephanie Reinders, BA*; Yong Guan, PhD; Min Wu, PhD; Jennifer Newman, PhD**
1:55 p.m.	-	2:10 p.m.	**C20**	**Control Point Selection for Analysis and Height Measurement From Closed-Circuit Television (CCTV) Images** *Angela Savva, BS; Domenic Raneri, BS; Sebastien Moret, PhD; Philip Maynard, PhD**
2:10 p.m.	-	2:30 p.m.	**C21**	**Using an Orthogonal Fingerprint Matcher to Boost Recognition of Contactless Fingerprints** *Mark A. Walch, MArch, MPH**
2:30 p.m.	-	2:40 p.m.		**Break**

Innovation: Borders of Intelligence II

Moderator: *Yong Guan, PhD*
Iowa State University
Ames, IA

Co-Moderator: *Alex J. Nelson, PhD*
National Institute of Standards and Technology
Gaithersburg, MD

2:40 p.m.	-	2:55 p.m.	**C22**	**Machine Learning in Data From Crime-Related Mobile Devices: Bidirectional Recurrent Neural Networks for Named-Entity Recognition (NER) in WhatsApp, Instagram™, and Facebook® Messenger Text Conversations** *Matheus S. Oliveira*; Daniel M. Caldas, MS; Thiago P. Faleiros* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
2:55 p.m.	-	3:10 p.m.	**C23**	**Steganography Detection Using Machine Learning (ML)** *Joshua Ralls*; Shuangteng Zhang, PhD**
3:10 p.m.	-	3:20 p.m.	**C24**	**Digital Forensic Evidence Cracking an Ingenious Murder Cover-Up: Lochner's Principle Re-Validated** *Mohit Chauhan, MBBS, MD, DHM**
3:20 p.m.	-	3:30 p.m.	**C25**	**Quantum Digital Forensics: The Applications of Digital Forensics in a Quantum World** *Suzzanne I. Myers**
3:30 p.m.	-	3:50 p.m.	**C26**	**Applications of a Convolutional Neural Network (CNN) for Automatic Classification of Outsole Features** *Miranda R. Tilton, MS*; Susan VanderPlas, PhD*
3:50 p.m.	-	4:00 p.m.		**Break**

Inspiration: Beyond the Borders

Moderator: *Andrew N. Crouse, BA*
Epiq Systems, Inc
Washington, DC

4:00 p.m.	-	4:15 p.m.	**C27**	**An Effective Security Assessment Framework for Drone as a Service (DaaS): A Digital Forensic Technique** *Fahad Salamh, PhD*; Umit Karabiyik, PhD; Marcus Rogers, PhD*
4:15 p.m.	-	4:30 p.m.	**C28**	**The Forensic Utility of Smart Doorbells** *Christina A. Malone, MSFS*; Carl R. Kriigel, MA*; Seth M. Eisenberg; Hillary Lathrop, PhD*
4:30 p.m.	-	4:50 p.m.	**C29**	**Counterfeit Drug Detection Using Multi-Spectral Imaging** *Brady Carter, PhD**
4:50 p.m.	-	5:05 p.m.	**C30**	**Pathways to the Identification of Multinational Victims of Mass Disasters: The Role of Blockchain Technology** *Shada Alsalamah, PhD*; Emilio Nuzzolese, PhD*

Friday

Illumination: Finding the Borders II

Moderator: *Jason Lewis, PhD*
University of South Florida
Tampa, FL

8:30 a.m.	-	8:35 a.m.		**Welcome** *Marla E. Carroll, BS*
8:35 a.m.	-	8:50 a.m.	**C31**	**A Proposed Framework for Digital Video Authentication** *Gregory S. Wales, MS*; Catalin Grigoras, PhD; Jeff M. Smith, MS*
8:50 a.m.	-	9:15 a.m.	**C32**	**Automated Standards-Based Normalization and Correlation of Mobile Device Evidence** *Eoghan Casey, PhD*; Martina Reif, MS*; Quentin Rossy, PhD*
9:15 a.m.	-	9:30 a.m.	**C33**	**Known Source Artifacts Examination With Digital Forensic Tools** *Hayden A. Hendrickson, BS; Amanda A. Moses, BS*; Kimberly Bradley, MS*; Shuangteng Zhang, PhD*
9:30 a.m.	-	9:55 a.m.	**C34**	**Teaching Digital Forensics to Young Women and Underserved Youth** *Eoghan Casey, PhD*; Daryl Pfeif, BA*
9:55 a.m.	-	10:05 a.m.		**Break**

Inquisitive: Mobile Borders II

Moderator: *Walter T. Hart, MBA*
Silicon Valley Bank
San Francisco, CA

10:05 a.m.	-	10:30 a.m.	**C35**	**iOS® Photo Vault Forensics** *Siddharth S. Chowdhury, MS*; Kayla Rux; Kathryn C. Seigfried-Spellar, PhD**
10:30 a.m.	-	10:50 a.m.	**C36**	**A Constantly Moving Target: Best Practices for Apple® iOS® Device Seizure, Access, and Extraction** *Joseph Levi White, MS**
10:50 a.m.	-	11:05 a.m.	**C37**	**Unlocking Fingerprint Scanner-Enabled Mobile Phones** *Christina A. Malone, MSFS*; Anthony Koertner, MS; Seth M. Eisenberg; Hillary Lathrop, PhD*
11:05 a.m.	-	11:20 a.m.	**C38**	**A Forensic Comparative Analysis of a Fitness Tracking Application on Mobile Devices Assigned** *Christina A. Malone, MSFS*; Carl R. Kriigel, MA*; Seth M. Eisenberg; Hillary Lathrop, PhD*
11:20 a.m.	-	11:35 a.m.	**C39**	**Android™ App Forensic Evidence Database (AndroidAED)** *Chen Shi, MS*; Chao-Chun Cheng; Connor Kocolowski; Emmett Kozlowski, BS; Justin Kuennen, BS; Matthew Lawlor, BS; Mitchell Kerr, BS; Jacob Stair, BS; Zhonghao Liao, PhD; Zhenqiang Gong, PHD; Yong Guan, PhD*
11:35 a.m.	-	11:50 a.m.	**C40**	**The Use of the On-Screen Time Display for Authentication of Body-Worn Video** *Gretchel Lomboy, MSc*; James Zjalic, MSc*
11:50 a.m.	-	1:15 p.m.		**Lunch**

Multidisciplinary Session: Digital & Multimedia Sciences & Jurisprudence—Digital Forensics I

Moderator: *Maxwell Christopher Fabricant, JD*
The Innocence Project
New York, NY

Co-Moderator: *Danielle D. Ruttman, JD*
Brooklyn, NY

1:15 p.m.	-	1:30 p.m.	**F27**	**The Need for a Full Specification for Digital Forensic Tool Validation** *Nicolas R. Hughes, JD**
1:30 p.m.	-	2:00 p.m.	**C41**	**Narrative Use Cases for Harmonizing Forensic Science Practices and Digital/Multimedia Evidence** *Mark Pollitt, PhD; Eoghan Casey, PhD**
2:00 p.m.	-	3:00 p.m.	**C42**	**Digital Evidence in the United States Courts of Appeal** *Martin Novak, MPA**
3:00 p.m.	-	3:15 p.m.		**Break**

Multidisciplinary Session: Digital & Multimedia Sciences & Jurisprudence—Digital Forensics II

Moderator: *Jerry G. Landau, JD*
Arizona Supreme Court
Phoenix, AZ

Co-Moderator: *Howard S. Stein, JD*
Stein Lotzkar and Starr P.S., Inc
Bellevue, WA

3:15 p.m.	-	3:30 p.m.	**F28**	**#Datastories** *Paul Reedy**
3:30 p.m.	-	3:45 p.m.	**F29**	**Spotting Stingrays: The Legal Issues of Covert Cell Phone Location Surveillance** *Michael Buresh, JD**
3:45 p.m.	-	4:15 p.m.	**F30**	**Historical Cell-Site Location Basics** *Michael Buresh, JD**
4:15 p.m.	-	4:45 p.m.	**F31**	**Drone Laws: The Imminent Quandry** *Corey A. Bauer, JD*; Victor W. Weedn, MD, JD*; Anthony M. Hallett**

Wednesday

Poster Session

11:30 a.m. - 1:00 p.m. **D1** **Amusement Park Accidents Caused by Fatigue Failure**
Chan-Seong Park, PhD; Honh-Pil Jeon; Kwangsoo Choi, MA; Jae-mo Goh, PhD; Nam-Kyu Park, PhD*

11:30 a.m. - 1:00 p.m. **D2** **The Role of the Dynamometer in the Analysis of Manner of Death by Asphyxia: A Case Report and Review of the Literature**
Matteo A. Sacco, MD; Fabrizio Cordasco, MD*; Francesco Sicilia, MD*; Luigi De Aloe, MD; Orazio Malfa, MD; Carmen Scalise, MD; Gionata Fragomeni, PhD; Pietrantonio Ricci, PhD; Santo Gratteri, MD; Isabella Aquila, MD. PhD*

11:30 a.m. - 1:00 p.m. **D3** **Railway Fatalities: The Importance of the Autopsy for the Reconstruction of Railway Accidents**
Claudia Perrone, MD; Ilaria Santoiemma; Alessandra Stellacci; Salvatore Moliterno, MD; Lucia Nardelli; Alessio Ostuni, MD; Francesco Vinci, MD*

Thursday—Session I

Weapons: Knives & Firearms

Moderator: *Kurt D. Weiss, MS*
Case Study Collision Science, LLC
Santa Barbara, CA

8:30 a.m. - 8:50 a.m. **D4** **A Comparison of Scientifically Valid and Traditional Firearm Trigger Mechanism Evaluation Techniques**
*John Nixon, MBA**

8:50 a.m. - 9:10 a.m. **D5** **A Defect Investigation of a Gun Rack**
Darren Franck, MSME; Harold Franck, MSEE*

9:10 a.m. - 9:30 a.m. **D6** **The Effect of Fabric Tension on Knife and Tool Damage**
Patrick H. Geoghegan, PhD; Debra J. Carr, PhD; Sarah V. Hainsworth, PhD*

9:30 a.m. - 10:00 a.m. **D7** **The Effectiveness of Overt and Covert Protection Against Attacks by Sharp Implements**
Sarah V. Hainsworth, PhD; Patrick H. Geoghegan, PhD*

10:00 a.m. - 10:15 a.m. **Break**

Fire & Explosion Investigations

Moderator: *Darren Franck, MSME*
Advanced Engineering Associates, Inc
Charleston, WV

10:15 a.m. - 10:30 a.m. **D8** **The Impact of Ventilation on Fire Patterns in Full-Scale Structures: Experiments, Analysis, and Education**
Daniel Madrzykowski, PhD; Craig G. Weinschenk, PhD*

10:30 a.m. - 10:50 a.m. **D9** **The Explosive Destruction of a Horse Trailer With Integrated Living Quarters**
David R. Bosch, PhD; Mark C. Pozzi, MS**

10:50 a.m. - 11:05 a.m. **D10** **An Investigation Into the Cause of a Fire Engulfing Two Collided Buses**
Qiang Chen, PhD; Xiao Hu**

11:05 a.m. - 11:25 a.m. **D11** **Understanding and Controlling the Potential Risk of Jobsite Construction Hazards**
*Daniel M. Honig, PE**

11:25 a.m. - 11:40 a.m. **Break**

Poster Session

11:30 a.m. - 1:00 p.m. **D12** **Improving the Accuracy of the Quantitative Method for Evaluating Fracture Load by Blunt Force: A Proposal for the Fracture Load Analysis Method Using the Victim's Bone Shape, Bone Mineral Density Distribution, and Soft Tissue Thickness**
Tatsuya Fukuoka, ME; Yasumi Ito, PhD; Ryuichi Yamada; Yoshiyuki Kagiyama, PhD; Tomotaka Matsubara; Sonoka Okura; Tetsuya Nemoto, PhD*

11:30 a.m. - 1:00 p.m. **D13** **Physical Properties of Additive Manufacturing to Combat the Illicit Use of 3D Printing Technology**
April Bowen, BS; Ryan G. Zdenek; Brooke W. Kammrath, PhD; Maria-Isabel Carnasciali, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **D14** **Hot-Air Ballooning—Rare as Disastrous Incidents: An Italian Case Report**
Eloisa Maselli, MD; Aldo Di Fazio; Gianni De Giorgio; Alessandro Dell'Erba, PhD*

Samples, Magnets, & Trace Elements

Moderator: *Harold Franck, MSEE*
Advanced Engineering Associates, Inc
Charleston, WV

11:40 a.m. - 11:55 a.m. **D15** **Complexity vs. Uncertainty in Models**
*Willem A. Schreuder, PhD**

11:55 a.m. - 12:10 p.m. **D16** **Bulk and Micro-Scale Trace Element Analysis of Glass Standard Reference Materials (SRMs) Using Modern Nuclear Analytical Methods and Laser Ablation-Inductively Coupled Plasma/Mass Spectrometry (LA-ICP/MS)**
Nicholas Sharp, PhD; Jamie L. Weaver, PhD; Maria Martinez, PhD; Ruthmara Corzo, PhD; Rick Paul, PhD; Jose R. Almirall, PhD; Eric B. Steel*

12:10 p.m. - 12:25 p.m. **D17** **The Strange Case of the Magnet on the Electricity Meter: When Wrongly Executed Tests Show a Non-Existent Tampering Effect**
Alessandro M. Ferrero, MSc; Veronica Scotti, LLM*

12:25 p.m. - 1:25 p.m. **Lunch**

Forensic Linguistics & Research

Moderator: *Sarah V. Hainsworth, PhD*
Aston University
Birmingham, UNITED KINGDOM

1:25 p.m. - 1:45 p.m. **D18** **Qualifications for Professional Work in Forensic Linguistics**
Carole E. Chaski, PhD*

1:45 p.m. - 2:05 p.m. **D19** **A Validation Test of SynAID in Authorship Attribution Using Legal Transcriptions**
*Timothy Habick, PhD**

2:05 p.m. - 2:25 p.m. **D20** **Challenges and Opportunities for Integrating Epistemic and Evidential Information Into Author Recognition Systems**
*E. Allyn Smith, PhD**

2:25 p.m. - 2:45 p.m. **D21** **Detecting Linguistic Markers of Religious Extremism in an Online Environment: A Pakistan Case Study**
*Mariam Dar, PhD**

2:45 p.m. - 3:05 p.m. **D22** **Forensic Linguistic Research Collaboration Between an Industry Research Institute and a Forensic Science Laboratory**
Carole E. Chaski, PhD; Andrea Ledic, MS*

3:05 p.m. - 3:25 p.m. **D23** **Formalizing Spanish Markedness: Working Toward a Spanish Version of the Automated Linguistic Identification & Assessment System (ALIAS) Syntax-Based Authorship Identification (SynAID)**
Ángela Almela, PhD; Pascual Cantos, PhD; Moisés Almela, PhD*

3:25 p.m. - 3:40 p.m. **Break**

Collision Analysis & Investigations

Moderator: *David Pienkowski, PhD*
University of Kentucky
Lexington, KY

3:40 p.m. - 4:00 p.m. **D24** **Driver Seat and Fuel System Failure in a Rear-End Collision**
Kurt D. Weiss, MS; Mark C. Pozzi, MS**

4:00 p.m. - 4:15 p.m. **D25** **Electrical Bike (E-Bike) Deceleration Analysis Using Advanced Electronic Systems**
Berislav Barišic-Jaman, BS; Igor Spoljaric, MA*

4:15 p.m. - 4:30 p.m. **D26** **Rear Seat Crashworthiness: Predictable Failures of Seats, Belts, Liftgates, Vehicle Structures, and Loss of Occupant Survival Space in Rear Impacts, Especially in the Third Row**
Mark C. Pozzi, MS; Carley C. Ward, PhD; Kenneth J. Saczalski, PhD*; Parris Ward, JD*; David R. Bosch, PhD**

4:30 p.m.	-	4:40 p.m.	**D27**	**Sliding Distance Measurements and Their Role in Pedestrian vs. Vehicle Accidents** *Omid Komari**
4:40 p.m.	-	5:00 p.m.	**D28**	**Face It: A Dangerous Passing Maneuver in an Elite Cycling Event Can Have Fatal Consequences** *Billy S. Cox, Jr.**

Thursday—Session II

Multidisciplinary Session: Criminalistics II & Engineering & Applied Sciences

8:30 a.m.	-	8:45 a.m.	**B89**	**"A Gun Too Far"—Reconstruction of a Homicide** *Alexander Jason, BA**
8:45 a.m.	-	9:00 a.m.	**D29**	**Who Was Texting During the Alleged Kidnapping and Rape?** *Carole E. Chaski, PhD**
9:00 a.m.	-	9:15 a.m.	**B90**	**Crowbar Paints in Forensic Investigations With In-Depth Techniques: A Casework Investigation and the Start of a Multi-Technique Database** *Peter de Joode; Xiaoma Xu, PhD; Jill R. Klaasse; Maurice Olderiks; Zita Y. van Zanten; Gerard J.Q. van der Peijl, PhD**
9:15 a.m.	-	9:30 a.m.	**D30**	**Electrical Fire or Arson Crime?** *Helmut G. Brosz, BASc**
9:30 a.m.	-	9:45 a.m.	**B91**	**The Refinement and Application of a Kinetic Model to Predict the Evaporation of Gasoline for Fire Debris Analysis** *Amanda L. Setser, MS*; Victoria L. McGuffin, PhD; Ruth Waddell Smith, PhD*
9:45 a.m.	-	10:15 a.m.	**D31**	**When Law Enforcement Relies on Some On-Board Vehicle Crash Data to Reconstruct a Crash Reconstruction in Criminal Prosecution, but the Overlooked Data is Exculpatory** *Billy S. Cox, Jr.**
10:15 a.m.	-	10:30 a.m.		**Break**
10:30 a.m.	-	10:45 a.m.	**B92**	**Photogrammetry Using Visible, Infrared, Hyperspectral, and Thermal Imaging of Crime Scenes** *Gerda Edelman; Maurice Aalders**
10:45 a.m.	-	11:00 a.m.	**D32**	**Spoliation: Willful Loss of Evidence Crime in an Electrocution Case** *Helmut G. Brosz, BASc**
11:00 a.m.	-	11:15 a.m.	**B93**	**Forensic Gait Analysis: State of the Science and a Case Study** *Michael S. Nirenberg, DPM**
11:15 a.m.	-	11:30 a.m.	**B94**	**Interdisciplinary Forensic Investigations—Combining Evidence in Complex Cases** *Irene Kuiper; Jan A. De Koeijer, MD; Gerard J.Q. van der Peijl, PhD**
11:30 a.m.	-	12:00 p.m.	**D33**	**Criminal Engineering and Science Without Consequences: Why?** *David R. Bosch, PhD*; Mark C. Pozzi, MS*; Kenneth J. Saczalski, PhD*; Carley C. Ward, PhD; Parris Ward, JD*

Friday

Head & Neck Trauma Research

Moderator: *Kurt D. Weiss, MS*
Case Study Collision Science, LLC
Santa Barbara, CA

8:30 a.m.	-	8:55 a.m.	**D34**	**Head and Neck Trauma: BioMedical Engineering Analysis of Entrapment Testing** *Laura L. Liptai, PhD*; Ellyson Maleski, BS**
8:55 a.m.	-	9:10 a.m.	**D35**	**An Experimental Study of Inertial Mechanisms of Motorcycle Helmet Accident Retention Failures** *Kenneth J. Saczalski, PhD*; Mark N. West, BS; Mark C. Pozzi, MS*; Todd Saczalski, BSMET*
9:10 a.m.	-	9:30 a.m.	**D36**	**The 1921 Death of Nino Martoglio, Pirandello's Mentor: A Cold Case and Literature Review** *Massimiliano Esposito, MD*; Giuseppe D. Albano, MD; Antonino Barbaro Paratore, MS; Sebastiano Battiato, PhD; Pasquale Malandrino, MD; Fabrizio Vanaria, MD; Sabrina Franco; Monica Salerno, MD, PhD; Giulio Di Mizio, MD, PhD; Cristoforo Pomara, MD, PhD*
9:30 a.m.	-	9:50 a.m.	**D37**	**Skull Fracture Risk: An Experimental Comparison Between Elastic (Drone) and Inelastic (Wood Block) Impacts Focused on Fracture Type and Tolerance Using Instrumented Postmortem Human Subjects (PMHS)** *John H. Bolte, PhD*; David Stark, PhD; Amanda M. Agnew, PhD; Yun-Seok Kang, PhD*
9:50 a.m.	-	10:10 a.m.	**D38**	**Cervical Spine Injury of Postmortem Human Subjects in Rear-End Impacts** *Yun-Seok Kang, PhD*; John H. Bolte, PhD*
10:10 a.m.	-	10:25 a.m.	**D39**	**Head Injury Criteria (HIC) Scaling for Assessing Closed Head Injury Risk** *Robert D. Anderson, MS*; Billy S. Cox, Jr.*
10:25 a.m.	-	10:40 a.m.		**Break**

Video Analysis & Vehicle System Forensics

Moderator: *Robert D. Anderson, MS*
Biomechanics Analysis
Tempe, AZ

10:40 a.m.	-	10:50 a.m.	**D40**	**Forensic Motor Vehicle Accident Investigation** *David Pienkowski, PhD**
10:50 a.m.	-	11:10 a.m.	**D41**	**Body-Mounted Camera Motion Analysis—Accuracy and Validation of 3D Camera Match Solutions** *Michael Callahan, BSME*; Brady Held, BFA*; Sean G. Snyder, BS**
11:10 a.m.	-	11:30 a.m.	**D42**	**3D Computer Photogrammetric Analysis of Multiple Surveillance Cameras Synchronized Into a Single Data Set to Track the Movement of a Vehicle** *Jorge Mendoza, BS, ME**
11:30 a.m.	-	11:50 a.m.	**D43**	**Vehicle System Forensics and Criminal Investigations Involving Automobiles** *Wesley Vandiver, BA**

Poster Session

11:30 a.m. - 1:00 p.m. **D44** **The Development of an Intelligent Mobile Application to Enhance the Quality of Latent Fingerprint Acquisition**
Nicholas Frey, BS; Carilyn J. Santisteban, BS*; Khalid Noman*; Mingkui Wei, PhD; Jorn Chi-Chung Yu, PhD*

11:30 a.m. - 1:00 p.m. **D45** **The Bisected Man: An Uncommon Pattern of Injury in a Fatal Motorcycle Crash**
Luigi Papi; Federica Gori, MD; Sara Turco, MD; Alice Chiara Manetti, MD; Costanza Filomena*

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**E1**	**The Detection of Latent Bloodstains Covered With Three Types of Current Top-Selling Paint/Primer Mixtures Using BlueStar®** *Mark Vecellio, MFS*; Catia P. Dombaxe*; Lisa B.B. Kasamba*; Devin Walker**
11:30 a.m.	-	1:00 p.m.	**E2**	**The Visualization of 9mm and .40 Caliber Gunshot Residue (GSR) From Various Ranges of Fire With Alternate Light Sources (ALS) and Infrared (IR) Imaging** *Mark Vecellio, MFS*; Sarah V. Morello*; Ryan Greaney**
11:30 a.m.	-	1:00 p.m.	**E3**	**Forensic Art—Know the Terms: Understanding Forensic Art Terminology** *Sandra R. Enslow, BA*; Daniel Marion, Jr., PhD**
11:30 a.m.	-	1:00 p.m.	**E4**	**Extraction and Quantification of DNA From Buccal Cells of Peruvian Coca Leaf Users and Non-Users** *Maher Noureddine, PhD*; James A. Bailey, PhD; Gian C. Iannacone, MS; Martha R. Palma Malaga, MG; Michele Rosso, PhD; Santina Castriciano, BSc*
11:30 a.m.	-	1:00 p.m.	**E5**	**No Lab, No Problem! Practical Active Learning Ideas for a Forensic DNA Course** *Kelly L. Knight, MS**
11:30 a.m.	-	1:00 p.m.	**E6**	**A Unique Case of Death by Electrocution in Water in an Abandoned Building** *Justin L. Wilson, BS*; Elizabeth R. Mooney, DO*
11:30 a.m.	-	1:00 p.m.	**E7**	**A Survey of Deaths in Judicial Control Areas in South Osaka** *Alissa M. Shida, BS*; Kei Ikeda, MD; Aoki Yayoi, BA; Naoto Tani, MA; Tomoya Ikeda, PhD, MD; Takaki Ishikawa, MD, PhD*
11:30 a.m.	-	1:00 p.m.	**E8**	**Death of a Five-Year-Old Child in a Drum-Type Washing Machine: An Autopsy Case Report** *Alissa M. Shida, BS*; Naoto Tani, MA; Tomoya Ikeda, PhD, MD; Takaki Ishikawa, MD, PhD; Kei Ikeda, MD; Aoki Yayoi, BA*
11:30 a.m.	-	1:00 p.m.	**E9**	**Parenting Behavior and Nutritional Deficits: Three Cases of Child Neglect** *Luana Bonaccurso, MD*; Caterina Bosco, MD*; Lucia Tattoli, PhD; Francesco Lupariello, MD; Sara S. Racalbuto, PsyD; Elena Coppo, MD; Giancarlo Di Vella, MD, PhD**
11:30 a.m.	-	1:00 p.m.	**E10**	**A Storm of Knives: Femicide and Attempted Suicide in an Ordinary Family** *Maria Silvestre, MD; Giuseppe Bertozzi, MD*; Santina Cantatore; Dania De Carlo, MD; Stefania De Simone, MD; Angelo Montana, MD; Francesca Maglietta, MD**
11:30 a.m.	-	1:00 p.m.	**E11**	**Fatal Dog Attacks: A Case Report and the Application of a New Forensic Approach** *Stefania De Simone, MD; Maria Silvestre, MD; Lorenzo Spagnolo, MD; Giuseppe Bertozzi, MD*; Mauro A. Ciavarella; Alessandra Radogna, MD; Francesco Sessa, MS**
11:30 a.m.	-	1:00 p.m.	**E12**	**Anabolic Androgenic Steroids (AASs) Use/Abuse: The First Italian Report** *Francesco Sessa, MS*; Giuseppe Bertozzi, MD*; Francesca Maglietta, MD*; Luigi Cipolloni, MD, PhD*; Daniela Pisanelli, MS; Monica Salerno, MD, PhD*; Cristoforo Pomara, MD, PhD**

11:30 a.m. - 1:00 p.m. **E13** **Human Bones and the Estimation of the Postmortem Interval (PMI): An Experimental Study**
Francesco Sessa, MS; Santina Cantatore; Giuseppe Bertozzi, MD*; Francesca Maglietta, MD*; Luigi Cipolloni, MD, PhD; Daniela Pisanelli, MS; Pietrantonio Ricci, PhD*

11:30 a.m. - 1:00 p.m. **E14** **Fatal Attraction: A Case Report of a Homicidal Drowning Involving a Couple**
Michela Ferrara, MD; Francesco Sessa, MS*; Alessio Marangelli; Luigi Cipolloni, MD, PhD; Lorenzo Spagnolo, MD; Santina Cantatore; Francesca Maglietta, MD**

11:30 a.m. - 1:00 p.m. **E15** **An Evaluative Look at Shotguns: Pellet Spread**
Kimberly Butler-Derose, MFS; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD*; Amy Zimmer, MS*

11:30 a.m. - 1:00 p.m. **E16** **Examining Potential Degradation Between Antemortem and Postmortem Fingerprints**
Anielle Duncan, BA; Samantha Upton, BA*; Kathleen Flor-Stagnato, MA; Dawnie W. Steadman, PhD*

11:30 a.m. - 1:00 p.m. **E17** **Training Needs for Search and Rescue (SAR) Teams During Mass-Disaster Fire Scene Recoveries: Lessons Learned From the 2018 California Camp Fire**
Leigh Hayes; Alyssa Straub, BA*; Eric J. Bartelink, PhD; Ashley E. Kendell, PhD; Colleen F. Milligan, PhD*

11:30 a.m. - 1:00 p.m. **E18** **Ice Cold Cases: When Glaciers Give Back Corpses**
Serena Maria Curti, MD; Pasquale Beltempo, MD*; Maurizio Castelli, MD; Mirella Gherardi, MD*

11:30 a.m. - 1:00 p.m. **E19** **An Overview of 3D Printing in Forensic Science: The Tangible Third-Dimension**
Rachael M. Carew, MSc; David Errickson, PhD*

11:30 a.m. - 1:00 p.m. **E20** **The Detection of Sodium Hypochlorite Adulterated Foods and Salsas in a Poisoning Investigation**
David S. Jackson, BS; Lisa A. Kaine, BS; David F. Crockett, BS*

11:30 a.m. - 1:00 p.m. **E21** **Applying a Standardized and Scientific Approach to Recognize and Investigate Co-Occurring Criminal Forms of Fatal and Non-Fatal Asphyxiation in Order to Broaden Assessments to Include the Possibility of Other Types of Criminal Asphyxiation That Include at Least One Type of Aquatic Asphyxiation**
Andrea Zaferes, BA; Allyson Cordoni, MSN*; Kathy Bell*; Kelsey P. McKay**

11:30 a.m. - 1:00 p.m. **E22** **An Evaluation of Various Swab Types for Recovery of Touch DNA From Firearms**
Raven DeWeese, BS; Catherine O. Brown, MSFS; Thomas V. Walsh, MSFS; Heather L. Harris, JD; Megan M. Foley, MSFS*

11:30 a.m. - 1:00 p.m. **E23** **Validation of a Paper Analytical Device Through Analysis of Illicit Substances Found at Fatal Overdose Scenes**
Tracy-Lynn E. Lockwood, BS; Philip Hyunh; Katie Bailey; Alfarena Ballew, MBA; Brad Ray; Marya Lieberman, PhD*

Thursday

General Forensics and Crimes I

Moderator: *Meryle A. Dotson, MA*
New York City Office of Chief Medical Examiner
New York, NY

Co-Moderator: *Gulnaz T. Javan, PhD*
Alabama State University
Montgomery, AL

8:30 a.m. - 8:45 a.m. **E24** **Success Rate Comparison of Latent Prints and Touch DNA From a Pistol**
Siera Ramirez, BS; Stephen C. King, BA; Kelly Beatty, MSFS; Catherine G. Rushton, EdD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

8:45 a.m. - 9:00 a.m. **E25** **Unique Dangers in the Medicolegal Death Investigation Process**
Brett E. Harding, MBA; Barbara C. Wolf, MD*

9:00 a.m. - 9:15 a.m. **E26** **"Comet-Tailing" Associated With an Intermediate-Range Gunshot Entrance Wound**
Samuel P. Prahlow, MPH; Theodore T. Brown, MD; Joseph A. Prahlow, MD*

9:15 a.m. - 9:30 a.m. **E27** **Biomechanical Considerations in 3D Reconstruction of Shooting Events**
*Parris Ward, JD**

9:30 a.m. - 9:45 a.m. **E28** **Detection, Identification, and Characterization of Gunshot Residue (GSR) Using Raman Spectroscopy**
Igor K. Lednev, PhD; Shelby R. Khandasammy, BS*

9:45 a.m. - 10:00 a.m. **E29** **A Serial Killer and Seven Homicides: Finding the Graves—A Multijurisdictional Investigation**
Michelle S. Clark, MS; James R. Gill, MD; Kristen Hartnett-McCann, PhD*

10:00 a.m. - 10:15 a.m. **Break**

General Forensics and Crimes I

Moderator: *Derek J. Kingsbury, MBA*
U.S. Army Criminal Investigation Command
Joint Base Lewis-McChord, WA

Co-Moderator: *Micah Rush, MSFS*
Fort Benning Criminal Investigation Battalion
Fort Benning, GA

10:15 a.m. - 10:30 a.m. **E30** **Spicing Things Up: Death Due to the Use of the Synthetic Cannabinoid ADB-FUBINACA**
Anita Roman Hasert, BS; Demi B. Garvin, PharmD*

10:30 a.m. - 10:45 a.m. **E31** **Collaboration in Action—A Case Study on Implementing the *National Best Practices for Sexual Assault Kits: A Multidisciplinary Approach* Recommendations**
*Julie L. Valentine, PhD**

10:45 a.m. - 11:00 a.m. **E32** **Meningitis as a Cause of Death in a Medical Examiners Setting**
Breanna M. Cuchara, MFS; Ariel C. Viramontes, MD*; Francisco J. Diaz, MD*

11:00 a.m. - 11:15 a.m. **E33** **Drug Abuse and Misuse Leading to Death in Tippecanoe County, Indiana (1993–2013): A Five-Year Update (2018)**
*Matthew C. Wietbrock, BS**

11:15 a.m. - 11:30 a.m. **E34** **The Application of Virtual Reality in Training First Responders in the Proper Handling of the Dead**
Ivett Kovari, PhD; Pierre M.M. Guyomarc'h, PhD; Christian Rouffaer, MS*

11:30 a.m.	-	11:45 a.m.	**E35**	**Examining the Impact of Trauma and Stress Across Forensic and Investigative Contexts** *J. Amber Scherer, PhD*; Amanda L. Farrell, PhD*; Timothy J. Ainger, PhD**
11:45 a.m.	-	12:00 p.m.	**E36**	**The Effect of the Medicolegal Evaluation on Asylum Seekers: The Proposal for a New Operating Model** *Antonietta Lanzarone*; Stefania Zerbo, MD; Francesca Korte; Valeria Tullio; Elvira Ventura Spagnolo, MD; Antonina Argo, PhD*
12:00 p.m.	-	1:00 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**E37**	**"V for Vendetta": A Hidden Revenge Murder** *Alessandra Radogna, MD; Stefania C. Bello, MD; Pietrantonio Ricci, PhD; Lorenzo Spagnolo, MD*; Maria Silvestre, MD; Michela Ferrara, MD*; Francesco Sessa, MS*; Francesca Maglietta, MD**
11:30 a.m.	-	1:00 p.m.	**E38**	**Killer Tractor: A Forensic Methodological Approach in Work-Related Deaths** *Lorenzo Spagnolo, MD*; Francesca Maglietta, MD*; Pietrantonio Ricci, PhD; Alessandra Radogna, MD; Stefania De Simone, MD; Michela Ferrara, MD*; Luigi Cipolloni, MD, PhD*
11:30 a.m.	-	1:00 p.m.	**E39**	**A Kindle Dinner With a Friend: Great Start, Bad Finish** *Alessandra Radogna, MD; Marco Savito, MD; Francesca Maglietta, MD*; Irene Riezzo, MD, PhD; Marcello Rendine, DBA; Michela Ferrara, MD*; Pietrantonio Ricci, PhD; Francesco Sessa, MS**
11:30 a.m.	-	1:00 p.m.	**E40**	**Hanging Games: An Unusual Case of Accidental Hanging in a Child** *Stefania De Simone, MD; Francesca Maglietta, MD*; Alessio Marangelli; Francesco Sessa, MS*; Luigi Cipolloni, MD, PhD; Mauro A. Ciavarella; Giuseppe Bertozzi, MD**
11:30 a.m.	-	1:00 p.m.	**E41**	**The New Italian Law on Legitimate Defense: New Scenarios on the Crime Scene** *Maria Silvestre, MD*; Francesca Maglietta, MD*; Giuseppe Bertozzi, MD*; Francesco Sessa, MS*; Mauro A. Ciavarella; Pietrantonio Ricci, PhD; Luigi Cipolloni, MD, PhD*
11:30 a.m.	-	1:00 p.m.	**E42**	**Post-Coital DNA Recovery in Minority Proxy Couples** *Patricia M. Speck, DNSc*; Erin K. Hanson, PhD; John Ballantyne, PhD; Peng Li, PhD; Simmone Nouer, PhD; Pamela D. Connor, PhD*
11:30 a.m.	-	1:00 p.m.	**E43**	**A Ten-Year Review of Opioid-Related Deaths at West Tennessee Regional Forensic Center: 2007–2017** *Haley M. St. John, BS*; Juliette Scantlebury, MD*
11:30 a.m.	-	1:00 p.m.	**E44**	**Epidemiological and Toxicological Profile of Homicide Victims in a Legal Medicine Unit in Brazil** *Yara V. Lemos, MS*; Alberto J. A. Wainstein; Larissa M. Savoi; Ana P. Drummond-Lage*
11:30 a.m.	-	1:00 p.m.	**E45**	**Characterizing Deaths Related to Hurricane Michael Using Vital Statistics Data** *Samuel P. Prahlow, MPH*; Heather Rubino, PhD; David Atrubin, MPH; Allison Culpepper, BS*
11:30 a.m.	-	1:00 p.m.	**E46**	**Modeling Postmortem Submersion Interval (PMSI) Estimation From the Microbiome of Bone in a Freshwater Lake** *Claire M. Cartozzo, MS*; Baneshwar Singh, PhD; Jenise Swall, PhD; Tal Simmons, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*

11:30 a.m. - 1:00 p.m. **E47** **Entrance and Exit Hole Characteristics: Bullet Types, Substrates, and Firing Distance**
Brienne Lukes, MFS; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD**

11:30 a.m. - 1:00 p.m. **E48** **Undergraduate Forensic Physics Education in Turkey**
Aylin Yalçin Saribey, PhD; Kemal Akin, BS; Sevil Atasoy, PhD*

11:30 a.m. - 1:00 p.m. **E49** **Surgical Fire: A Case Report, Literature Analysis, and Medicolegal Considerations**
Salvatore Roccuzzo, MD; Patrizia Gualniera; Daniela Sapienza; Cristina Mondello, MD; Elvira Ventura Spagnolo, MD; Serena Scurria, PhD; Alessio Asmundo*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **E50** **Never Trust Appearances: A Case of Screwdriver Homicide**
Luigi Papi; Federica Gori, MD; Sara Turco, MD; Claudia Giaconi, MD; Francesca Iannaccone; Costanza Filomena*

11:30 a.m. - 1:00 p.m. **E51** **Accidental Autoerotic Death: An Unusual Case of Lethal Asphyxiophilia Associated With Autogynephilia**
Elena Lucenti, MD; Lorenzo Marinelli; Omar Bonato, MD; Mauro Coppone, MD; Raffaella Marino, MD; Chiara Marini, MD; Rosa Maria Gaudio; Matteo Marti, PhD; Matteo Fabbri, MS; Margherita Neri, MD, PhD; Paolo Frisoni, MD*

11:30 a.m. - 1:00 p.m. **E52** **School Bullying Affecting America's School Children: A Look at Statistical Trends**
Christina A. Leija, MS; Tyler J. Perkins*; Rikki A. Tasso-Thompson*; Viktoriya Tikhonova*; Ashley I. Unsinn*; Hunter N. Gault*; Levi E. Peck**

11:30 a.m. - 1:00 p.m. **E53** **Choose the Cause of Death: A Complex Suicide**
Mauro Coppone, MD; Elena Lucenti, MD; Omar Bonato, MD; Raffaella Marino, MD; Enrica Calabrese, MD; Matteo Fabbri, MS; Rosa Maria Gaudio; Matteo Marti, PhD; Paolo Frisoni, MD; Margherita Neri, MD, PhD*

11:30 a.m. - 1:00 p.m. **E54** **Strategies for Reconciliation of Personal Identifying Information and DNA Profile Data at a State DNA Index System (SDIS) Databasing Laboratory**
Christopher Piwonka, BS; Rebecca A. Shane, BS; Kelly Bell, BS; Gary J. Molina, BA; Mariela Rivera, MS; Charles I. Stokes III BS; Ryan Strand, MS; Erik Werzner, BS*

11:30 a.m. - 1:00 p.m. **E55** **Sex and Race Determination Based on Attenuated Total Reflection/Fourier Transform-Infrared (ATR/FTIR) Spectroscopy of a Bloodstain**
Ewelina M. Mistek, MS; Lenka Halamkova, PhD; Igor K. Lednev, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **E56** **A Chemical and Biological Analysis of a Medieval Skeletal Collection From the Archaeological Site at Lobor, Croatia**
*Zdravka Hincak Daris; Siniša Merkaš**

11:30 a.m. - 1:00 p.m. **E57** **Evaluating Medicolegal Examinations of Turkish Detainees During the Recent State of Emergency in Turkey Within the Scope of the Istanbul Protocol**
Alper Keten; Johannes Nicolakis, MD; Ramazan Abaci, PhD*

11:30 a.m. - 1:00 p.m. **E58** **The Medicolegal Evaluation of Detention Procedures During the Recent State of Emergency in Turkey**
Alper Keten; Johannes Nicolakis, MD; Ramazan Abaci, PhD*

General Forensics and Crimes II

Moderator: *Angela M. Miller*
U.S. Army Criminal Investigation Command
Quantico, VA

Co-Moderator: *Anita Roman Hasert, BS*
Charleston County Coroner's Office
North Charleston, SC

1:00 p.m. - 1:15 p.m. **E59** **Health Care Professionals as Persons of Interest? Preventing Strategies, Medical Liability, and Italian Jurisprudence Through the Analysis of an Inpatient Psychiatric Suicide**
Federica Gori, MD; Luigi Papi; Sara Turco, MD; Alice Chiara Manetti, MD; Francesca Iannaccone*

1:15 p.m. - 1:30 p.m. **E60** **A New Approach and Suggestions for Child Sexual Abuse Cases**
Sila Aslan; Mete K. Gulmen, PhD, MD; Ahmet Hilal, MD*

1:30 p.m. - 1:45 p.m. **E61** **An Evaluation of Child Suicide Death Cases**
Mete K. Gulmen, PhD, MD; Necmi Cekin, MD; Kenan Kaya; Sila Aslan*

1:45 p.m. - 2:00 p.m. **E62** **Rapid, Real-Time, and In-Field Detection of Fentanyl Residue: A New Approach Using Ion Mobility Spectrometry (IMS)**
*John Z. Wang, PhD**

2:00 p.m. - 2:15 p.m. **E63** **Forensic Palynology: Pollen and Its Role in Crime Scene Investigation, National Security, and Forensic Science**
*Taylor Strunsee, MS**

2:15 p.m. - 2:30 p.m. **E64** **A Forensic Comparison of Cable Ties to Create a Database**
Celeste M. Lambert, BS; Ted R. Schwartz, MS; Brandi Clark; Thomas A. Brettell, PhD; Lawrence Quarino, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

2:30 p.m. - 2:45 p.m. **E65** **"What's Wrong With Putting Crime Victims in Jail?"**
*Patricia C. Smith, MSL**

2:45 p.m. - 3:00 p.m. **E66** **Computed Tomography (CT) Scans and Autopsy Results of Nine Civilian Casualties of a Terrorist Attack**
*Vincenzo M. Grassi, MD; Simone Grassi, MD; Tommaso Tartaglione, MD; Vincenzo L. Pascali, MD, PhD; Antonio Oliva, MD, PhD**

3:00 p.m. - 3:15 p.m. **Break**

General Forensics and Crimes II

Moderator: *Frank M. Marchak, PhD*
Veridical Research and Design
Bozeman, MT

Co-Moderator: *Patricia C. Smith, MSL*
Harris County District Attorney's Office
Houston, TX

3:15 p.m. - 3:30 p.m. **E67** **Forensic Facial Reconstruction in Identification vs. Archaeological Investigation: Science or Art?**
*Sharon K. Moses, PhD**

3:30 p.m. - 3:45 p.m. **E68** **Clinical Implications of Using Alternate Light to Assess Bruises**
Daniel J. Sheridan, PhD; Katherine N. Scafide, PhD; Nancy R. Downing, PhD; Matt Hyat, PhD*

3:45 p.m.	-	4:00 p.m.	**E69**	**Ocular Measures in the Detection of Deception** *Frank M. Marchak, PhD**
4:00 p.m.	-	4:15 p.m.	**E70**	**Breaking the Code to Better Understanding Asian Youth Gangs** *Cliff Akiyama, MPH, MA**
4:15 p.m.	-	4:30 p.m.	**E71**	**Characteristic Injuries of Organized Dogfighting** *Rachel Touroo, DVM**
4:30 p.m.	-	4:45 p.m.	**E72**	**The Use of Forensic Osteology in Animal Cruelty Investigations** *Amanda Fitch, MS**
4:45 p.m.	-	5:00 p.m.	**E73**	**Gap Assessment of Stress, Vicarious Trauma, and Resiliency for Forensic Science Professionals** *Andrew P. Levin, MD*; Heidi Putney, MA*; Danielle M. Crimmins, MS*; Jonathan G. McGrath, PhD*

Friday

General Forensics and Crimes III

Moderator: *Kimberlee Sue Moran, MSc*
Rutgers University - Camden
Camden, NJ

Co-Moderator: *Adam C. Armstrong, MS*
U.S. Army Criminal Investigation Division
Fort Bragg, NC

8:30 a.m.	-	8:45 a.m.	**E74**	**Advances in Color and Texture Analysis of Human Hair** *David S. Hernandez Funes*; Candice Bridge, PhD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
8:45 a.m.	-	9:00 a.m.	**E75**	**Discrimination Between Human and Animal Blood by Attenuated Total Reflection/ Fourier Transform Infrared (ATR/FTIR) Spectroscopy for Forensic Purposes** *Ewelina M. Mistek, MS*; Igor K. Lednev, PhD*
9:00 a.m.	-	9:15 a.m.	**E76**	**Linking Footprints to Feet: Research Advances and a *Daubert* Case Study** *Michael S. Nirenberg, DPM*; Kewal Krishan, PhD*
9:15 a.m.	-	9:30 a.m.	**E77**	**A Tale of a White-Tailed Deer: Anomalous Serology and DNA Results Offer Clues in an Alleged Hit-and-Run Case** *Maher Noureddine, PhD*; AnnMarie Clark, MS; James A. Bailey, PhD*
9:30 a.m.	-	9:45 a.m.	**E78**	**Digital Photography of Decomposed Fingertips for Postmortem Fingerprint Identification** *Rachael Landrie**
9:45 a.m.	-	10:00 a.m.	**E79**	**Development of Baseline Performance Levels for Standardized Field Sobriety Tests in Sober Individuals** *Zoe Foglia*; Karen S. Scott, PhD; Scott M. Davis; Heather L. Harris, JD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
10:00 a.m.	-	10:15 a.m.		**Break**

General Forensics and Crimes III

Moderator: *Frances M. Wheatley, MA*
Tennessee State Medical Examiner's Office
Nashville, TN

Co-Moderator: *Charla Skinner Perdue, MS, MFS*
Florida State University Panama City Campus
Panama City, FL

10:15 a.m. - 10:30 a.m. **E80** **Statistical Evaluation of Latent Prints Developed by Oil Red O Solutions**
Brent M. Allred, PhD; Amanda Kemmerer; Mary H. Monks, BS*

10:30 a.m. - 10:45 a.m. **E81** **Tracking Trends Through the Peer Review Process**
*Jessica LeCroy, BS**

10:45 a.m. - 11:00 a.m. **E82** **Examining Drug-Related Deaths While in Custody: A Look Into the Role That Race Plays in Drug-Related Custody Deaths in Texas**
Jesus A. Campos, MS; Ashraf Mozayani, PharmD, PhD*

11:00 a.m. - 11:15 a.m. **E83** **The Application of 3D Motion Capture in the Analysis of Doubtful Forensic Cases**
Isabella Aquila, MD. PhD; Roberto Raffaele, BE*; Giuseppe Ivan Aquila; Fabrizio Cordasco, MD*; Matteo A. Sacco, MD*; Francesco Sicilia, MD; Carmen Scalise, MD; Orazio Malfa, MD; Luigi De Aloe, MD; Santo Gratteri, MD; Pietrantonio Ricci, PhD*

11:15 a.m. - 11:30 a.m. **E84** **Geolocating and Protecting the Grave Sites of the Disappeared in Lebanon**
*Malena Gonzalez Eichenberg, BS; Marwan Khoury**

11:30 a.m. - 11:45 a.m. **E85** **The National Institute of Standards and Technology/National Institute of Justice (NIST/NIJ) Evidence Management Initiative**
*Shannan Williams-Mitchem, MA**

11:45 a.m. - 12:00 p.m. **E86** **Challenges in Establishing an Innocence Project in the Philippines: The Innocence Project Philippines Network (IPPN) Experience**
Maria Corazon A. De Ungria, PhD; Jose M. Jose, LLB*

12:00 p.m. - 1:00 p.m. **Lunch**

Poster Session

11:30 a.m. - 1:00 p.m. **E87** **Terrorist Attack: The Identification of Destructive Lesions**
Lorenzo Spagnolo, MD; Giuseppe Bertozzi, MD*; Luigi Cipolloni, MD, PhD; Benedetta Baldari, MD; Livia Besi; Michela Ferrara, MD*; Stefania De Simone, MD; Vittorio Fineschi, MD, PhD*

11:30 a.m. - 1:00 p.m. **E88** **Bovine Meat Fraud and Adulteration in Brazil: Innovative Techniques for Tamper Detection**
Karen M. Nunes; Marcus Vinicius de Oliveira Andrade, MSc; Marcio Talhavini, PhD; Mariana R. Almeida, PhD; Jose M. Amigo, PhD; Marcelo M. Sena, PhD*

11:30 a.m. - 1:00 p.m. **E89** **Multiple Implications of Postmortem Computed Tomography (PMCT) in the Forensic Approach to Charred Bodies**
Massimiliano dell'Aquila, MD; Aniello Maiese, MD; Alessandra De Matteis, MD; Raffaele La Russa, MD; Alessia Quattrocchi; Mauro Arcangeli; Paola Frati, PhD; Vittorio Fineschi, MD, PhD*

11:30 a.m. - 1:00 p.m. **E90** **"Giant" Aneurysm of the Right Coronary Artery—The "Fortuitous Event" in Road Traffic: The Relevance of the Judicial Autopsy**
Lorenzo Marinelli; Elena Lucenti, MD*; Omar Bonato, MD*; Mauro Coppone, MD*; Matteo Fabbri, MS*; Rosa Maria Gaudio; Marianna Daniele; Margherita Neri, MD, PhD*

11:30 a.m. - 1:00 p.m. **E91** **The Abuse and Misuse of Prescription Opioids: Is It Only an American Problem?**
Andrea Cioffi; Zoe Del Fante, MD; Nicola Di Fazio; Gianpietro Volonnino; Enrica Pinchi; Aniello Maiese, MD*

11:30 a.m. - 1:00 p.m. **E92** **On-Going Decision Analysis (a.k.a. Black Box) Studies at the Federal Bureau of Investigation (FBI) Laboratory**
Colbey Ryman; Jocelyn V. Abonamah, MFS; Paige Riley*; Keith L. Monson, PhD; Brian Eckenrode, PhD*

11:30 a.m. - 1:00 p.m. **E93** **The Role of Postmortem Computed Tomography (PMCT) and Immunohistochemical Techniques in a Case of Aspiration Pneumonia in Suspected Sudden Infant Death Syndrome (SIDS)**
Gianpietro Volonnino; Valentina Fazio; Silvia Romano; Alessia Quattrocchi; Massimiliano dell'Aquila, MD; Raffaele La Russa, MD*

11:30 a.m. - 1:00 p.m. **E94** **Epidural Hematoma in a Whiplash Cervical Injury: A Rare Condition**
Luca Tomassini; Andrea Cioffi; Valentina Fazio; Zoe Del Fante, MD; Gianpietro Volonnino; Paola Santoro, MD; Mauro Arcangeli*

11:30 a.m. - 1:00 p.m. **E95** **Auxillary Artery Injury: A Rare Case of Death by Severe Blood Loss Due to an Accidental Fall**
Paola Santoro, MD; Valentina Fazio; Nicola Di Fazio; Alessia Quattrocchi; Andrea Cioffi; Alessandra De Matteis, MD*

11:30 a.m. - 1:00 p.m. **E96** **The "Social Web" Autopsy as an Evolution of Psychological Autopsy: The Application of the Method in Forensic Cases in Comparison**
Carmen Scalise, MD; Francesco Sicilia, MD*; Matteo A. Sacco, MD*; Ada Maida; Valerio R. Aquila; Fabrizio Cordasco, MD*; Luigi De Aloe, MD; Cristoforo Ricci, PhD; Orazio Malfa, MD; Pietrantonio Ricci, PhD; Roberto Raffaele, BE*; Silvia Boca; Santo Gratteri, MD; Isabella Aquila, MD. PhD*

11:30 a.m. - 1:00 p.m. **E97** **The Role of Social Networks in the Crime of Stalking: A Case of Murder**
Matteo A. Sacco, MD; Roberto Raffaele, BE*; Santo Gratteri, MD; Pietrantonio Ricci, PhD; Fabrizio Cordasco, MD; Francesco Sicilia, MD; Vincenzo Rania, MD; Carmen Scalise, MD; Luigi De Aloe, MD; Cristoforo Ricci, PhD; Orazio Malfa, MD; Isabella Aquila, MD. PhD*

11:30 a.m. - 1:00 p.m. **E98** **Optimizing Sensitivity and Validating the Illumina® Infinium Assay for Genotyping of Forensically Relevant Sample Types for Investigative Lead Generation**
David Russell, MS; Elayna Moreithi, MS; Christina Neal, MS; Mary Heaton, MS; Stephen Turner*

11:30 a.m. - 1:00 p.m. **E99** **Suicidal Cut-Throat Wounds: Elements of Differentiation From Homicidal Slaughtering**
Giulia Gubinelli; Eloisa Maselli, MD; Valeria Bruno, MD; Francesca Donno, MD; Gianni De Giorgio; Alessandro Dell'Erba, PhD*

11:30 a.m. - 1:00 p.m. **E100** **Forensic Science in the United States Court of Appeals: A Ten-Year Review (2009–2018)**
Danielle M. Crimmins, MS; Martin Novak, MPA**

11:30 a.m.	-	1:00 p.m.	**E101**	**Time Between Sexual Assault and Evidence Collection: Implications for the Development of Combined DNA Index System (CODIS) -Eligible DNA Profiles** *Lauren Schagel*; Julie L. Valentine, PhD*; Leslie Miles, DNP*
11:30 a.m.	-	1:00 p.m.	**E102**	**Does It Wash Away? The Impact of Bathing or Showering on DNA Analysis Findings From Sexual Assault Kits** *Deborah Richardson*; Julie L. Valentine, PhD*; Leslie Miles, DNP*
11:30 a.m.	-	1:00 p.m.	**E103**	**Testing Sexual Assault Kits Leads to Justice for Both Victims and Suspects** *Reilly Caten, BS*; Julie L. Valentine, PhD*; Leslie Miles, DNP*
11:30 a.m.	-	1:00 p.m.	**E104**	**Giving a Voice to Male Rape Victims Through Novel Short Tandem Repeat (STR) DNA Findings** *Jacob Momberger*; Sam Pugh*; Julie L. Valentine, PhD*; Leslie Miles, DNP*
11:30 a.m.	-	1:00 p.m.	**E105**	**Homicide by Unspecified Means: The Importance of a Forensic Pathologist and Anthropologist Teamwork Approach in Death Scene Investigation and Postmortem Analysis** *Hailee St. Louis, BS*; Jered B. Cornelison, PhD; Carolyn V. Isaac, PhD; Theodore T. Brown, MD*
11:30 a.m.	-	1:00 p.m.	**E106**	**Drowning: The Silent Death** *Cheyenne M. Graham*; Roxanne Phatak, MS* *(FSF Emerging Forensic Scientist Award Poster Presentation)*

Forensic Education

Moderator: *Sarah N. Crosby, MS*
U.S. Army
Arlington, VA

1:00 p.m.	-	1:15 p.m.	E**107**	**Let's Solve It: Designing an Interactive and Engaging Online Forensic Science Laboratory Course** *Gina Londino-Smolar, MS**
1:15 p.m.	-	1:30 p.m.	**E108**	**High-Impact Learning Within a Project-Based Learning Course** *John A. Williams, PhD**
1:30 p.m.	-	1:45 p.m.	**E109**	**Engaging Freshman Undergraduate Students in Forensic Science Research to Improve Science, Technology, Engineering, and Math (STEM) Retention** *Kristi Bugajski, PhD**
1:45 p.m.	-	2:00 p.m.	**E110**	**Forensic Science Distance Education: Trials, Tribulations, and Triumphs** *Lerah Sutton, PhD*; Jason H. Byrd, PhD*
2:00 p.m.	-	2:15 p.m.	**E111**	**Using Online Learning and Gamification to Enhance Reasoning Skills** *Sarah R. Coffman*; Lyndsie N. Ferrara, PhD**
2:15 p.m.	-	2:30 p.m.	**E112**	**Crossing the Border Between Academia and Forensic Science Practice: Managing a Successful Student Internship Program in an Integrated Medical Examiner Office and Crime Laboratory** *Jasmine M. Jefferson, MS*; Michal L. Pierce, MS*
2:30 p.m.	-	2:45 p.m.	**E113**	**Forensic Sciences Learning for Victims of Enforced Disappearances** *Carlos A. Gutierrez, MS**
2:45 p.m.	-	3:00 p.m.		**Break**

Forensic Education

Moderator: *Michael White, BS*
New York, NY

3:00 p.m.	-	3:15 p.m.	**E114**	**Curriculum and Accreditation Pertaining to Crime Scene Investigation Education** *Mark Vecellio, MFS*; Erick P. Bryant, MFS**
3:15 p.m.	-	3:30 p.m.	**E115**	**Taking Science Behind the Walls: Side-by-Side Learning With Students and Incarcerated Individuals** *Susan M. Gurney, PhD**
3:30 p.m.	-	3:45 p.m.	**E116**	**The Lessons Learned in Teaching Forensic Toxicology From "Wet Lab" to "Lab Bench"** *Michelle R. Peace, PhD*; David Nigro, BS; Aaron Lavigne, BS; John Venuti, BS; Justin L. Poklis, BS*
3:45 p.m.	-	4:00 p.m.	**E117**	**High Tech, High Touch Learning for High School and Undergraduate Forensic- and Crime Scene-Related Fields of Study** *Charla Skinner Perdue, MS, MFS**
4:00 p.m.	-	4:15 p.m.	**E118**	**Chemical Murder Mystery: Two Decades of Experiences of Forensic Science Education in Delivering a Hands-On Event for 15- and 16-Year-Old Students at a University** *Stewart Walker, PhD**
4:15 p.m.	-	4:30 p.m.	**E119**	**Deceased Children Due to Trauma and the Evaluation of Non-Accidental Injuries: A Dutch Retrospective Level-1 Trauma Unit Study** *Marie-Louise Loos; Steven Kooiker, MD; Rick R. Van Rijn, MD, PhD*; Roel Bakx, MD, PhD*
4:30 p.m.	-	4:45 p.m.	**E120**	**Scene Inspection in a Harsh High Mountain Environment: The Valle d'Aosta Pilot Program** *Pasquale Beltempo, MD*; Serena Maria Curti, MD*; Maurizio Castelli, MD; Mirella Gherardi, MD*
4:45 p.m.	-	5:00 p.m.	**E121**	**Alternate Light Wavelength and Filter Detection of Inflicted Cutaneous Bruises** *Katherine N. Scafide, PhD*; Matthew J. Hayat, PhD; Yesser Sebeh, DMD, MPH; Nancy R. Downing, PhD; Daniel J. Sheridan, PhD*

Wednesday

Poster Session

11:30 a.m. - 1:00 p.m. **F1** **Brazil's Forensic Science: How Could It Be Helped (and Improved) by American and European Guidelines?**
Maria Eduarda A. Amaral; Nereu J. Giacomolli*

Thursday

What We Don't Know

Moderator: *Terri Rosenblatt, JD*
The Legal Aid Society
Bronx, NY

Co-Moderator: *Ashfaq A. Kharal, LLM*
Silk Consultancy
Lahore, PAKISTAN

8:45 a.m. - 9:15 a.m. **F2** **Deaths During Law Enforcement Encounters**
*Michael M. Baden, MD**

9:15 a.m. - 9:30 a.m. **F3** **Litigating the Admissibility of Black Box Forensic Software**
Kevin Riach, JD; Charles A. Ramsay, JD**

9:30 a.m. - 10:00 a.m. **F4** **The Defense Lawyer Perspective on Uncertainty in Probabilistic Genotyping**
Jessica Goldthwaite, JD; Tamara Giwa**

10:00 a.m. - 10:15 a.m. **Break**

Juveniles

Moderator: *Virginia Barron, JD*
Westbrook, MN

Co-Moderator: *Michael Semanchik, JD*
California Innocence Project
San Diego, CA

10:15 a.m. - 10:30 a.m. **F5** **Bioethics and Emerging Trends in Texas for Mirandizing Juveniles**
*Jennifer Bennett, JD**

10:30 a.m. - 11:15 a.m. **F6** **"I Thought if I Told Them I Did It, They Would Let Me Go …" and the Unintended Consequences of *Miller v. Alabama***
*Antoinette E. Kavanaugh, PHD**

11:15 a.m. - 12:00 p.m. **F7** **"The Worst of Both Worlds": Neurodevelopment of the Transitional Age Brain**
*Sandra Antoniak, MD**

12:00 p.m. - 1:00 p.m. **Lunch**

Poster Session

11:30 a.m. - 1:00 p.m. **F8** **Is Communication Between the Surgeon and the Anesthesiologist Really Necessary? What Are the Medicolegal Implications?**
Lucia Nardelli; Alessandra Stellacci; Claudia Perrone, MD; Salvatore Moliterno, MD; Francesco Vinci, MD*

What Does the DNA Really Tell Us?

Moderator: *Amy M. Curtis, JD*
Virginia Department of Forensic Science
Richmond, VA

Co-Moderator: *Raymond Valerio, JD*
Bronx County District Attorney
Bronx, NY

1:00 p.m. - 1:30 p.m. **F9** **Recent National Institute of Standards and Technology (NIST) Activities in Forensic Science: Examining Scientific Foundations and Innovation-to-Implementation Issues**
John M. Butler, PhD; Robert M. Thompson, MFS**

1:30 p.m. - 1:45 p.m. **F10** **The Elusive Holy Grail of Simple Yet Adequate DNA Mixture Evaluation Method, or How to Frame a Suspect?**
*Charles H. Brenner, PhD**

1:45 p.m. - 2:00 p.m. **F11** **DNA Confronts Bayes and There's Trouble**
*Charles H. Brenner, PhD**

2:00 p.m. - 2:30 p.m. **F12** **Probabilistic Genotyping in the Courtroom: Admissibility, Families, Secondary Transfer, and Competing Statistics**
Rachel H. Oefelein, MSc; Alicia M. Cadenas, MS; Samantha Orans Wandzek, MS; Cristina L. Rentas, MFS; Daniel I. Aguilar, MS*

2:30 p.m. - 2:45 p.m. **F13** **Scientific Transparency vs. Trade Secret: Issues Surrounding Disclosure of Computer Software Programs, User Manuals, and Source Codes**
*Jennifer Friedman, JD**

2:45 p.m. - 3:00 p.m. **Break**

Learning As We Go

Moderator: *Quandee Semrow, JD*
Cook County Public Defender
Forensic Science Division
Chicago, IL

Co-Moderator: *Tia D. Villeral*
Prairie View A&M Univeristy
Houston, TX

3:00 p.m. - 3:30 p.m. **F14** **The Fast and the Furious**
Matthew J. Marvin, BS; Sarah Chu, MS**

3:30 p.m. - 4:00 p.m. **F15** **The Nose Knows? Residual Odor and Cadaver Dogs: A Review**
*Dana Delger, JD**

4:00 p.m. - 4:30 p.m. **F16** **The Evolution of Wrongful Convictions in Fire Cases**
Terry-Dawn Hewitt, LLM; Wayne J. McKenna, LLB*

4:30 p.m. - 4:45 p.m. **F17** **Post-Conviction DNA Testing: A Law School and University Collaboration as a Model to Identify and Evaluate Post-Conviction Cases**
Katherine A. Roberts, PhD; Paula Mitchell, JD; Cassandra Olsen, JD; Nikki Herst-Cook, JD; Mehul B. Anjaria, MS*

Friday

Sampling

Moderator: *William C. Head, JD*
Atlanta, GA

Co-Moderator: *Raquel Cohen, JD*
California Innocence Project
San Diego, CA

8:30 a.m. - 8:45 a.m. **F18** **An Evaluation of Sample Preparation Techniques for Cannabis and Cannabis Products**
Kelsey Cagle; Jessica Westland, MPS; Frank Dorman, PhD*

8:45 a.m. - 9:00 a.m. **F19** **How Should Uncertainty Be Expressed and Communicated?**
Veronica Scotti, LLM; Alessandro M. Ferrero, MSc*

9:00 a.m. - 9:20 a.m. **F20** **Breath—A Bodily Fluid: Semantics, Syntax, Syllogisms, Euphemisms, and Science**
Dennis C. Hilliard, MS; Gil Sapir, JD*

9:20 a.m. - 9:40 a.m. **F21** **Secure Continuous Remote Alcohol Monitor (SCRAM): Judicial Liaison As Expert Witness Controverted**
Donald J. Ramsell, JD; Gil Sapir, JD; Raul Ayala, JD*

9:40 a.m. - 10:00 a.m. **F22** **WITHDRAWN**

10:00 a.m. - 10:30 a.m. **F23** **The Significance of Informed Consent in Workers' Compensation Forensic Blood Toxicology Testing**
*Helen D. O'Conor, LLM**

10:30 a.m. - 10:45 a.m. **Break**

Cutting Edge Use of Forensics and the Law

Moderator: *Alissa L. Bjerkhoel, JD*
California Innocence Project
San Diego, CA

Co-Moderator: *Michele Vaira, JD*
Foggia, ITALY

10:45 a.m. - 11:15 a.m. **F24** **Genetic Genealogy and Law Enforcement: New Bedfellows**
*Donald E. Shelton, JD, PhD**

11:15 a.m. - 12:00 p.m. **F25** **You Are the Judges: An Interactive Session on Cutting Edge Issues at the Intersection of Law and Science**
W. Milton Nuzum III, JD; Stephanie Domitrovich, JD, PhD**

12:00 p.m. - 1:15 p.m. **Lunch**

Poster Session

11:30 a.m. - 1:00 p.m. **F26** **The Importance of Evidence in Proof of Accusation in Criminal Procedure Law in Turkey**
Hatice Yilmaz, BS; Tugba Ünsal, PhD; Sevil Atasoy, PhD*

Multidisciplinary Session: Digital & Multimedia Sciences & Jurisprudence—Digital Forensics I

Moderator: *Maxwell Christopher Fabricant, JD*
The Innocence Project
New York, NY

Co-Moderator: *Danielle D. Ruttman, JD*
Brooklyn, NY

1:15 p.m. - 1:30 p.m. **F27** **The Need for a Full Specification for Digital Forensic Tool Validation**
*Nicolas R. Hughes, JD**

1:30 p.m. - 2:00 p.m. **C41** **Narrative Use Cases for Harmonizing Forensic Science Practices and Digital/Multimedia Evidence**
Mark Pollitt, PhD; Eoghan Casey, PhD**

2:00 p.m. - 3:00 p.m. **C42** **Digital Evidence in the United States Courts of Appeal**
*Martin Novak, MPA**

3:00 p.m. - 3:15 p.m. **Break**

Multidisciplinary Session: Digital & Multimedia Sciences & Jurisprudence—Digital Forensics II

Moderator: *Jerry G. Landau, JD*
Arizona Supreme Court
Phoenix, AZ

Co-Moderator: *Howard S. Stein, JD*
Stein Lotzkar and Starr P.S., Inc
Bellevue, WA

3:15 p.m. - 3:30 p.m. **F28** **#Datastories**
*Paul Reedy**

3:30 p.m. - 3:45 p.m. **F29** **Spotting Stingrays: The Legal Issues of Covert Cell Phone Location Surveillance**
*Michael Buresh, JD**

3:45 p.m. - 4:15 p.m. **F30** **Historical Cell-Site Location Basics**
*Michael Buresh, JD**

4:15 p.m. - 4:45 p.m. **F31** **Drone Laws: The Imminent Quandry**
Corey A. Bauer, JD; Victor W. Weedn, MD, JD*; Anthony M. Hallett**

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**G1**	**The Applicability of the "Dimodent" Sex Predictive Equation Assessed in a Senegalese Population** *Khalifa Dieng, DDS, PhD*; Sankoung Soumboundou**
11:30 a.m.	-	1:00 p.m.	**G2**	**A Case of Great East Japan Earthquake Human Remains for Which Digital Imaging Analysis of Dentures Helped in Identification** *Akiko Kumagi, DDS, PhD*; Mitsuru Izumisawa, PhD; Noriaki Takahashi, PhD; Yutaro Oyamada, PhD; Takuya Kobayashi, PhD*
11:30 a.m.	-	1:00 p.m.	**G3**	**Should Facial Marks Created Because of Tooth Loss Be Considered as Hard Evidence?** *Huseyin Afsin, PhD*; Gulnaz T. Javan, PhD*

Thursday

Dental Identification

Moderator: *Beverly Hedgepeth, DDS*
Memphis, TN

Co-Moderator: *Julie Wallace, DDS*
Elk River, MN

8:30 a.m.	-	9:00 a.m.	**G4**	**Paradise Lost: The Camp Fire** *Mark D. Porco, DDS**
9:00 a.m.	-	9:20 a.m.	**G5**	**National Crime Information Center (NCIC) Dental Coding: Washington State Patrol's Missing/Wanted and Unidentified Persons Unit (WSP/MUPU) Cold Case Hit** *Kyle C. Tanaka, DDS*; Gary L. Bell, DDS*
9:20 a.m.	-	9:35 a.m.	**G6**	**Exhumed Remains: A Historic United Kingdom Case Review** *Camilla George, BDS*; Gaille MacKinnon, MSc*
9:35 a.m.	-	9:50 a.m.	**G7**	**"Oscar": The Final Chapter** *Warren D. Tewes, DDS**
9:50 a.m.	-	10:10 a.m.	**G8**	**The Drowning of 26 Koreans in the Danube in Budapest** *Armin A. Farid, DMD**
10:10 a.m.	-	10:25 a.m.		Break

Dental Identification

Moderator: *Susan J. Baker, DMD*
Atlanta Laser Periodontics & Dental Implants
Norcross, GA

Co-Moderator: *Brian J. Murphy, DDS*
Mi Mort
Holly, MI

10:25 a.m. - 10:40 a.m. **G9** **A Measurement of Morphological Features of Maxillary First Molar Crowns for Human Dental Identification**
Ana M. Milheiro, PhD; Cezar Capitaneanu, DMD, PhD; Emmy Shaheem, PhD; Steffen Fieuws; Patrick W. Thevissen, PhD*

10:40 a.m. - 10:55 a.m. **G10** **The Uniqueness of Human Teeth: A Systematic Review and Meta-Analysis**
Cezar Capitaneanu, DMD, PhD; Guy Willems, PhD; Patrick W. Thevissen, PhD*

10:55 a.m. - 11:10 a.m. **G11** **Sex Estimation Using Enamel and Dentin Proportions of Human Mandibular Canines**
Zama Moosvi, MDS, MS; Scheila Manica, PhD; Gavin F. Revie, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

11:10 a.m. - 11:25 a.m. **G12** **Sexual Dimorphism in Mandibles and Permanent Mandibular Canines in a Brazilian Population: A Pilot Study**
Gabriel C. Dias; Macelle V. Campos; Carolina P. Magalhães; Renata C.F. Campina; Jaciel B. Oliveira*

11:25 a.m. - 11:40 a.m. **G13** **Forensic Dental Identification: Using Computerized Tomographic (CT) Scans to Identify Human Remains**
Iris L. Shields, DDS; Patrick A. Murray, DDS*

11:40 a.m. - 11:55 a.m. **G14** **A Study of Non-Metric Dental Traits of a North Indian Population: Forensic Aspects**
Kewal Krishan, PhD; Sandeep Kaur, PhD*

11:55 a.m. - 1:30 p.m. **Lunch**

Poster Session

11:30 a.m. - 1:00 p.m. **G15** **Hurricane Michael: The Role of the Forensic Odontologist**
*Lisa M. Hofstad, DMD**

11:30 a.m. - 1:00 p.m. **G16** **The Incorporation of Both Community and Forensic Dentistry in the Child Abuse and Neglect Clinic in Turin, Italy**
Emilio Nuzzolese, PhD; Elena Coppo, MD; Francesco Lupariello, MD*; Caterina Bosco, MD; Luana Bonaccurso, MD; Ilaria Cavecchia, MD; Giancarlo Di Vella, MD, PhD**

11:30 a.m. - 1:00 p.m. **G17** **A Forensic Age Estimation From the Pulp/Tooth Area Ratio (PTR) of the Canines: A Forensic Odontological Study**
*Jagmahender Singh Sehrawat, PhD**

Dental Identification

Moderator: *Mark W. Crumpton, DMD*
Maryville, TN

Co-Moderator: *Jayakumar Jayaraman, PhD*
University of Texas Health School of Dentistry
San Antonio, TX

1:30 p.m. - 1:45 p.m. **G18** **Fractalyse Software—The Analysis of the Trabecular Bone in Identification (The Continuation)**
*Sylvain Desranleau, DMD**

1:45 p.m. - 2:00 p.m. **G19** **An Innovative Approach to the Importation and Conversion of Antemortem (AM) Dental Data to Blockchain-Protected Forensic Data for Utilization in Disaster Victim Identification (DVI)**
Shada Alsalamah, PhD; Ala'a Alimam, BS; Ahad Alabdullatif, BS; Maram Alamri, BS; Miral Althaqeb, BS; Sara Alqahtani, BS; Kenneth W. Aschheim, DDS*; Sakher J. AlQahtani, PhD**

2:00 p.m. - 2:30 p.m. **G20** **The Identification of Skeletal Remains After Nearly Two Decades**
*Robert C. Walcott, DDS**

2:30 p.m. - 2:45 p.m. **G21** **The Odontologist Relationship With Medicolegal Death Investigators in the Setting of the Medical Examiner's Office and Their Role in Obtaining Antemortem Dental Records for Identification**
Christen C. Eggers, MS; John A. Piakis, DDS; Leigh-Ann Schuerman, DMD*

2:45 p.m. - 3:00 p.m. **G22** **The Performance of Forensic Craniofacial Identification in Surgically Altered Faces**
Petra Urbanová, PhD; Hana Eliasova, PhD; Tatjana Dostalova, MD, PhD*

3:00 p.m. - 3:30 p.m. **Break**

Dental Identification

Moderator: *Tina R. Woods, DMD*
University of Mississippi Medical Center
Jackson, MS

Co-Moderator: *Huseyin Afsin, PhD*
Istanbul, TURKEY

3:30 p.m. - 4:00 p.m. **G23** **The Recent Identification of a World War II Canadian Soldier: A Multidisciplinary Teamwork Approach**
Melanie Dumas, DMD; Trenna M. Reeve, DMD*; Sarah Lockyer, PhD**

4:00 p.m. - 4:20 p.m. **G24** **Automated Identification From Dental Data (AutoIDD): A New Development in Digital Forensics**
Gowri V. Reesu; Brenainn D. Woodsend, BS; Scheila Manica, PhD; Gavin F. Revie, PhD; Peter A. Mossey, PhD; Nathan L. Brown, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

4:20 p.m. - 4:35 p.m. **G25** **Helpful Hints for a Variety of Dental Autopsy Situations and a Compilation of "Interesting" Cases**
*Veronique F. Delattre, DDS**

4:35 p.m. - 4:50 p.m. **G26** **A Dental Malpractice Case Involving a Potentially Broken Dental Bur**
*Cheri Lewis, DDS**

Friday

Dental Age Assessment

Moderator: *Iris L. Shields, DDS*
Bel Air, MD

Co-Moderator: *Michael Clay, DMD*
Foley, AL

8:30 a.m. - 9:00 a.m.	**G27**	**Thresholding Adulthood: What Are We Doing?** *James F. Goodrich, FFOMP**
9:00 a.m. - 9:20 a.m.	**G28**	**Method Differences, Population Differences, or Examiner Differences: Which Affects the Age Estimation the Most?** *Sakher J. AlQahtani, PhD**
9:20 a.m. - 9:40 a.m.	**G29**	**Forensic Age Estimation Based on the London Atlas of Human Tooth Development and Eruption Assessment in a Population With Systemic Disorders: A Pilot Study** *Cristiana M.P. Pereira, PhD*; Lucianna P. Russell, MD; Maria Pádua, DDS; Ricardo H.A. Silva, PhD; Rui Filipe Vargas de Sousa Santos, PhD*
9:40 a.m. - 9:55 a.m.	**G30**	**Dental Age and Odds Probability at the 18-Year Threshold** *Graham J. Roberts, MDS*; Fraser McDonald, PhD; Fiona Warburton, MS; Victoria S. Lucas, PhD**
9:55 a.m. - 10:15 a.m.	**G31**	**Calculating the Standard Deviation: An Innovative Approach for Utilizing Historical Databases** *Sakher J. AlQahtani, PhD*; Kenneth W. Aschheim, DDS**
10:15 a.m. - 10:30 a.m.		**Break**

Dental Age Assessment

Moderator: *Amanda L. Thompson, DMD*
Birmingham, AL

10:30 a.m. - 10:45 a.m.	**G32**	**Third Molar Development in Caucasian and Chinese Populations and Its Implication in Dental Age Estimation** *Jayakumar Jayaraman, PhD*; Graham J. Roberts, MDS*
10:45 a.m. - 11:00 a.m.	**G33**	**Minimum Values for Mandibular Maturity Markers** *Victoria S. Lucas, PhD*; Fraser McDonald, PhD; Graham J. Roberts, MDS*
11:00 a.m. - 11:20 a.m.	**G34**	**Demirjian 2.0** *Corinne D'Anjou, DMD*; Derek M. Draft, DDS*; Arto Demirjian, DMD; Sigrid I. Kvaal; Normand Bach, DMD*
11:20 a.m. - 11:35 a.m.	**G35**	**A Comparison of Dental Age Estimations From Two Radiographic Methods of Metric Analysis in North Indian Young Adults** *Deeksha Sankhyan; Jagmahender Singh Sehrawat, PhD**

11:35 a.m.	-	11:50 a.m.	**G36**	**Dental Development in a London Population of Diverse Ethnicity** *Sally E. Andrews, MS*; Graham J. Roberts, MDS; Fraser McDonald, PhD; Pat Set, FRCR; Fiona Gilbert, FRCR*
11:50 a.m.	-	12:00 p.m.		**Discussion**
12:00 p.m.	-	1:45 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**G37**	**An Analysis of a Dental Prosthesis Technique in Korean War Casualties** *Seoeun Oh*; Hyejin Lee; Seokdong Oh; Kyoungmin Koh; Yu Ryang Jang, PhD*
11:30 a.m.	-	1:00 p.m.	**G38**	**The Advantages and Limitations of Various Dental Age Estimation Methods in Forensic Odontology: A Systematic Review** *Jagmahender Singh Sehrawat, PhD**
11:30 a.m.	-	1:00 p.m.	**G39**	**Disaster Victims Identification (DVI) Using Digital Radiology: A Case Report of a Brumadinho Victim Identification by the Dental Comparative Method** *Sandra G.G. da Silva*; Luciene M. Corradi, MS; Denise V. Travassos* *(FSF Emerging Forensic Scientist Award Poster Presentation)*

Dental Age Assessment

Moderator: *Grace Chung, DDS*
Clark County Office of Coroner/Medical Examiner
Las Vegas, NV

1:45 p.m.	-	2:00 p.m.	**G40**	**A Data-Driven Process, Prediction, and Reporting Model to Improve Human Identification Using the Mobile Application Intelligent System in Automation of Legitimated Examination Methods (iSALEM)** *Salem Altalie, FACLM**
2:00 p.m.	-	2:15 p.m.	**G41**	**The Estimation of Sex From Dental Arch Dimensions: An Odontometric Analysis** *Tanuj Kanchan, MD*; Rutwik D. Shedge, MSc; Vinay Kumar Chugh, MDS; Ankita Chugh, MDS*
2:15 p.m.	-	2:30 p.m.	**G42**	**Cementum Annuli: Technique, Microscopy, and Assessment of Age** *Michael Clay, DMD*; Murray K. Marks, PhD; James M. Lewis, DMD; Paula C. Brumit, DDS*
2:30 p.m.	-	2:45 p.m.	**G43**	**Morphological Examinations of the Teeth and Jaw Fragments Retrieved From an Ajnala Skeletal Assemblage: A Forensic Odontological Study** *Jagmahender Singh Sehrawat, PhD*; Ashith B. Acharya, GDFO* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
2:45 p.m.	-	3:00 p.m.		**Break**

Thomas Krauss Memorial Bitemark Session

Moderator: *Roland G. Chew, DDS*
Fremont, CA

3:00 p.m.	-	3:15 p.m.	**G44**	**The Importance of Bitemarks in Child Abuse Cases in Turkey** *Huseyin Afsin, PhD*; Sermet Koc; Gulnaz T. Javan, PhD*
3:15 p.m.	-	3:30 p.m.	**G45**	**A 3D Analysis of Bitemarks: A Validation Study Using an Intraoral Scanner** *Géromine Fournier, DDS*; Frederic Savall; Norbert Telmon, PhD, MD; Delphine Maret, PhD*
3:30 p.m.	-	3:50 p.m.	**G46**	**3D Dental Digital Study Models in Bitemark Comparison** *Robert B.J. Dorion, DDS**
3:50 p.m.	-	4:05 p.m.	**G47**	**Non-Bitemarks That I Have Known** *Robert E. Wood, DDS, PhD*; Yolanda Nerkowski, BA*; Taylor L. Gardner, BFS**
4:05 p.m.	-	4:25 p.m.	**G48**	**A Historic Perspective of Bitemark Analysis and Bitemark Comparison** *Robert B.J. Dorion, DDS**

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**H1**	**Circumstances and Injuries in Female Homicide Victims of Strangulation: A Four-Decade Review of 143 Cases in King County, Washington** *Robert Johnston, DO*; Richard C. Harruff, MD, PhD; Micheline Lubin, MD; Cloyd Steigerr; Nicole Siver*
11:30 a.m.	-	1:00 p.m.	**H2**	**A Fistful of Dollars: An Unexpected Delayed Development and Rupture of a Traumatic Fusiform Posterior Inferior Cerebellar Artery (PICA) Aneurysm** *Maria Silvestre, MD; Pietrantonio Ricci, PhD; Michela Ferrara, MD; Lorenzo Spagnolo, MD; Stefania De Simone, MD; Francesco Sessa, MS*; Giuseppe Bertozzi, MD**
11:30 a.m.	-	1:00 p.m.	**H3**	**An Accidental Death Caused by Blunt Force Injuries Resulting in Multiple Fractures and a Pulmonary Fat Embolism** *Juliana Molosky*; Stephen Peltier, BS; Joseph A. Prahlow, MD*
11:30 a.m.	-	1:00 p.m.	**H4**	**Carbon Dioxide Asphyxiation Due to Pulmonary Embolism: A Case Report** *Katherine Cochrane, MD*; Darinka Mileusnic-Polchan, MD, PhD*
11:30 a.m.	-	1:00 p.m.	**H5**	**Autopsy Findings in Dog Attacks in Mississippi** *Katie C. Donohue*; Heather M. McLendon**
11:30 a.m.	-	1:00 p.m.	**H6**	**Frangible Ammunition in Gunshot Wound Suicides in the Hampton Roads Region of Virginia: An Upward Trend?** *Catherine G. Wilson, BS*; Gary M. Zientek, MD; Wendy M. Gunther, MD*
11:30 a.m.	-	1:00 p.m.	**H7**	**The Feasibility of an Enteroclysis Pump for Postmortem Computed Tomography Angiography (PMCTA)** *Marloes E.M. Vester, MD; Ellen Servaas, MSc; Ludo F.M. Beenen, MD; Mara Clerkx; Astrid De La Rie, MS; Nick Lobé; Maaike J. Vogel; Rick R. Van Rijn, MD, PhD*; Roelof-Jan G. Oostra, PhD*
11:30 a.m.	-	1:00 p.m.	**H8**	**The Utility of Routine Histological Sampling in the Assessment of Cause and Manner of Death in Medicolegal Autopsies—Fire, Immersion, and Traffic-Related Deaths** *Björn Bäckström, MD*; Staffan Finn; Peter Lydig; Oscar Sandberg; Anders Eriksson, MD, PhD; Torfinn Gustafsson, MD*
11:30 a.m.	-	1:00 p.m.	**H9**	**Fibroplasia Ossificans Progressiva (FOP): Could Autopsy Define Syndromic Features?** *Vittorio Bolcato, MD; Matteo Moretti, MD*; Claudia Carelli; Davide Radaelli; Paolo Musto; Silvia D. Visona, MD; Gulnaz T. Javan, PhD; Antonio M.M. Osculati, MD*
11:30 a.m.	-	1:00 p.m.	**H10**	**A Questionable Cause of Death Alphabet Soup: Anaphylaxis, Bees, Cocaine, Diabetic Ketoacidosis (DKA), Emphysema, Fogger, Hypothermia, Insecticide, and Opiates** *Thomas B. Duong, BS*; John Winterholler, BS; Joseph A. Prahlow, MD; Prentiss Jones, Jr., PhD*
11:30 a.m.	-	1:00 p.m.	**H11**	**The Importance of Dashboard Camera Analysis in Fatal Vehicle-Pedestrian Crash Reconstruction** *Paolo Fais, PhD*; Jennifer Pascali, PhD; Guido Pelletti, MD; Alessio Giusti; Susi Pelotti, MD*
11:30 a.m.	-	1:00 p.m.	**H12**	**Computed Tomography (CT) and X-Ray Angiography on a Case of Traumatic Carotid Artery Occlusion Following a Physical Altercation Resulting in Cerebral Infarction** *Francesco Pontoriero, DO*; Rochelle A. Simon, MD; Zabiullah Ali, MD; Nikki Mourtzinos, DO; David R. Fowler, MD*

11:30 a.m. - 1:00 p.m. **H13** **IL-15, CD-15, and Tryptase as Markers of Wound Vitality in Compressed Neck Skin: When Conventional Macroscopic and Histological Findings Fail**
Omar Bonato, MD; Sara Chierici; Elena Lucenti, MD; Mauro Coppone, MD; Letizia Alfieri, MD; Enrica Calabrese, MD; Paolo Frisoni, MD; Matteo Fabbri, MS; Matteo Marti, PhD; Rosa Maria Gaudio; Margherita Neri, MD, PhD*

11:30 a.m. - 1:00 p.m. **H14** **Where is the Neoplasm? The Postmortem Diagnosis of Intravascular Large B-Cell Lymphoma (IVLBCL)**
Zoe Del Fante, MD; Nicola Di Fazio; Silvia Romano; Alessandra De Matteis, MD; Paola Santoro, MD; Aniello Maiese, MD*

11:30 a.m. - 1:00 p.m. **H15** **Numerical Postmortem Interval (PMI) Estimation Streamlined for Forensic Practice: Combining Photogrammetry, Thermal Imaging, and Computed Tomography (CT)**
Leah Wilk; Gerda Edelman; Maurice Aalders*

11:30 a.m. - 1:00 p.m. **H16** **When Hidden Elder Abuse Leads to Death: An Analysis of Casework**
Alberto Amadasi, MD; Federica Fersini; Paolo Fais, PhD; Guido Pelletti, MD; Maria Carla Mazzotti, MD; Susi Pelotti, MD*

11:30 a.m. - 1:00 p.m. **H17** **A Corpse in a Suitcase: A Case of Strangulation**
Francesco Amico, MD; Marco Torrisi; Dario Condorelli; Ilenia Russo; Martina Fichera, MD; Giuseppe Cocimano, MD; Giulio Di Mizio, MD, PhD; Monica Salerno, MD, PhD; Angelo Montana, MD*; Fabrizio Vanaria, MD**

11:30 a.m. - 1:00 p.m. **H18** **The Analysis of Head Injury in the Evaluation of Manner of Death: A Forensic Case Series and a Review of the Literature**
Isabella Aquila, MD. PhD; Francesco Sicilia, MD; Carmen Scalise, MD*; Luigi De Aloe, MD; Fabrizio Cordasco, MD*; Santo Gratteri, MD; Matteo A. Sacco, MD; Pietrantonio Ricci, PhD*

11:30 a.m. - 1:00 p.m. **H19** **The Anesthesiologist's Responsibility in Intracranial Placement of the Nasogastric Tube (NGT): A Case Series and Literature Review**
Alessandro Bonsignore, MD, PhD; Gianluca Landi; Federico Longhini, MD; Francesca Buffelli, PhD, MD*

11:30 a.m. - 1:00 p.m. **H20** **Powder-Free DNA Extraction Protocol From Bones and Teeth**
Heitor Correa; Gloria Brescia; Venusia Cortellini, PhD; Andrea Verzeletti, MD*

11:30 a.m. - 1:00 p.m. **H21** **A Complete Transection of the Aorta During Resuscitative Efforts**
Amanda Ho; Grant W. Herndon, DO*

11:30 a.m. - 1:00 p.m. **H22** **A Proposal of a Score to Evaluate Discrepancies Between the Results of External Body Examination and Forensic Autopsy**
Sara Gioia, MD; Valentina Rosati, MD*; Massimo Lancia, MD*; Fabio Suadoni, MD*

11:30 a.m. - 1:00 p.m. **H23** **Immunohistochemical Detection of Fibronectin, P-Selectine, FVIII, HSP-70, and MRP-8 in the Skin of Ligature Marks of Suicidal Hangings**
Fiorella Caputo, MD; Rosario Barranco*; Francesco Ventura, MD*; Tony Fracasso, MD, PhD*

11:30 a.m. - 1:00 p.m. **H24** **A Metabolomic Profile of Aqueous Humor in a 24-Hour Period After Death: An Animal Model for Postmortem Interval (PMI) Estimation**
Emanuela Locci, PhD; Matteo Stocchero, PhD; Alberto Chighine, MD; Fabio De Giorgio, MD; Matteo Nioi, MD; Ernesto d'Aloja, MD, PhD*

11:30 a.m. - 1:00 p.m. **H25** **Muscle Protein Degradation in Postmortem Interval (PMI) Estimation: Recent Accomplishments and Current Challenges**
Stefan Pittner, PhD; Bianca Ehrenfellner, MS; Katharina Weitgasser, MS; Angela Zissler, PhD; Peter Steinbacher, PhD; Fabio Carlo Monticelli*

11:30 a.m. - 1:00 p.m. **H26** **The Importance of Being Earnest: The Role of Autopsy in Preventing Litigation Related to the Management of Liver and Digestive Disorders**
*Stefano D'Errico, PhD; Benedetta Baldari, MD; Alessandro Santurro, MD; Mariarosaria Aromatario, MD, PhD; Matteo Scopetti, MD**

11:30 a.m. - 1:00 p.m. **H27** **A Preliminary Assessment of the Persistence of Prostate Specific Antigen (PSA) Transfers Under Various Conditions**
Keryne Skead; David San Pietro, PhD*

11:30 a.m. - 1:00 p.m. **H28** **Recovery of DNA From Washed Bloodstains**
Isil T. Erdogan, MS; Tugba Ünsal, PhD*; Aysun Gungor, MS; Kaan Yilancioglu, PhD; Sevil Atasoy, PhD*

11:30 a.m. - 1:00 p.m. **H29** **Changes in Receptor Expression of σ-1R in the Pineal Gland Related to Different Causes of Death**
Elvira Ventura Spagnolo, MD; Cristina Mondello, MD*; Gennaro Baldino, MD*; Antonio Guajana, MD; Letteria Minutoli, MD; Domenico Puzzolo, MD; Vincenzo Macaione, MD; Luigi Cardia, MD; Antonina Argo, PhD; Stefania Zerbo, MD; Alessio Asmundo*

11:30 a.m. - 1:00 p.m. **H30** **Early Myocardial Ischemia: An Immunohistochemical Analysis of Dystrophin and Matrix Metalloproteinase 9 (MMP-9)**
Cristina Mondello, MD; Elvira Ventura Spagnolo, MD; Salvatore Roccuzzo, MD; Luigi Cardia, MD; Alessio Asmundo*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **H31** **A Case of Suicide by Hemlock Intoxication**
Stephanie Diu, BA; Erica Maney*; Pamela L. Marshall, PhD; Jennifer L. Hammers, DO*

11:30 a.m. - 1:00 p.m. **H32** **A Fatality by Caustic Soda: Accidental or Suicidal?**
*Manoj Bhausaheb Parchake, MD**

11:30 a.m. - 1:00 p.m. **H33** **The Evolution of Safety Systems in Traumatic Deaths Due to Road Traffic Accidents: A Case Report and Review of the Literature**
Luigi De Aloe, MD; Fabrizio Cordasco, MD*; Francesco Sicilia, MD; Matteo A. Sacco, MD*; Carmen Scalise, MD; Pietrantonio Ricci, PhD; Orazio Malfa, MD; Santo Gratteri, MD; Isabella Aquila, MD. PhD**

11:30 a.m. - 1:00 p.m. **H34** **Is the Survey of Forensic Botany Useful? The Application and Limits of Forensic Case Analysis**
Isabella Aquila, MD. PhD; Luigi De Aloe, MD; Francesco Sicilia, MD; Matteo A. Sacco, MD*; Carmen Scalise, MD; Fabrizio Cordasco, MD; Roberto Raffaele, BE*; Vincenzo Rania, MD; Paola Frati, PhD; Vittorio Fineschi, MD, PhD; Santo Gratteri, MD; Pietrantonio Ricci, PhD*

11:30 a.m. - 1:00 p.m. **H35** **The Immunohistochemical Analysis in the Diagnosis of Freshwater Versus Saltwater Drowning: A Case Report and a Review of the Literature**
Isabella Aquila, MD. PhD; Orazio Malfa, MD; Matteo A. Sacco, MD*; Francesco Sicilia, MD; Fabrizio Cordasco, MD; Luigi De Aloe, MD; Carmen Scalise, MD; Santo Gratteri, MD; Pietrantonio Ricci, PhD*

Thursday—Session I

Natural Disease and Death Education

Moderator: *Robert F. Corliss, MD*
University of Wisconsin Hospital
Madison, WI

Co-Moderator: *Gregory A. Schmunk, MD*
County Medical Examiner's Office
Des Moines, IA

8:30 a.m. - 8:45 a.m. **H36** **Death From Pheochromocytoma Initially Presenting as a Suspected Homicide**
Apoorva R. Dharmadhikari; Joseph A. Prahlow, MD*

8:45 a.m. - 9:00 a.m. **H37** **A Spontaneous Aortic Rupture: A Report of Two Cases**
*Shashank Tyagi, MD**

9:00 a.m. - 9:15 a.m. **H38** **HIV Post-Sudden Cardiac Death (SCD): Rates of Autopsy-Defined Sudden Arrhythmic Death (SAD) Are 80% Higher in Persons With HIV**
Ellen Moffatt, MD; Eric Vittinghoff, PhD; Annie Bedigian, BS; Joseph K. Wong, MD; Philip Ursell, MD; Andrew Connolly, MD, PhD; Jeffrey Olgin, MD; Priscilla Hsue, MD; Amy P. Hart, MD; Zian Tseng, MD*

9:15 a.m. - 9:30 a.m. **H39** **A Fatal Case of Histoplasmosis With Colonic Perforation in a Patient With Acquired Immune Deficiency Syndrome (AIDS)**
Danielle Harrell, DO; Marco Ross, MD*

9:30 a.m. - 9:45 a.m. **H40** **The Implementation of a Forensic Pathology Rotation for Medical Students**
*Mario Rascon, MD**

9:45 a.m. - 10:00 a.m. **H41** **A Molecular Diagnostic Determination of Human vs. Bovine Origin of Viral-Associated Aggressive Natural Killer (NK) Cell Leukemia**
Natalie E. Taylor, MD, MS; Erik A. Ranheim, MD, PhD; William M. Rehrauer, PhD; Erin G. Brooks, MD*

10:00 a.m. - 10:15 a.m. **H42** **Neurodegeneration in the Forensic Setting: General Principals and Diagnostic Applications**
William T. Harrison, MD; Patrick E. Lantz, MD; Jerri McLemore, MD*

10:15 a.m. - 10:30 a.m. **Break**

Environmental Deaths

Moderator: *James Louis Caruso, MD*
Office of the Medical Examiner
Denver, CO

Co-Moderator: *Lorenzo Gitto, MD*
State University of New York Upstate
Department of Pathology
Syracuse, NY

10:30 a.m. - 10:45 a.m. **H43** **Hypothermia-Related Deaths: A Ten-Year Retrospective Study of Two Major Metropolitan Cities in the United States**
Gregory M. Dickinson, MD; Gene X. Maya, MD; Hannah C. Jarvis, MRCS**

10:45 a.m. - 11:00 a.m. **H44** **Leaving the Familiar: Suicidal Tourism in Cook County, Chicago, Illinois**
Katrina M Thompson, MD; Michael D. Eckhardt, MD; Adrienne Segovia, MD*

11:00 a.m.	-	11:15 a.m.	**H45**	**Shallow-Water Blackout: A Rare Case of Death During Pool Free Diving** *Aldo Liberto, MD*; Martina Fichera, MD; Pasquale Malandrino, MD; Dario Condorelli; Giuseppe Cocimano, MD; Orazio Cascio, MD; Edmondo Scoto; Monica Salerno, MD, PhD; Angelo Montana, MD; Giulio Di Mizio, MD, PhD*
11:15 a.m.	-	11:30 a.m.	**H46**	**The Elphinstone Tragedy: Understanding the Chaos of a Human Stampede on the Staircase of a Railway Station Footbridge** *Manoj Bhausaheb Parchake, MD**
11:30 a.m.	-	11:45 a.m.	**H47**	**A Unique Pattern of Tusk Injuries by Wild Boar: A Ten-Year Autopsy Analysis** *Nilesh Keshav Tumram, MD**
11:45 a.m.	-	12:00 p.m.	**H48**	**Hypothermia Deaths and Altered Mental Status** *Jasmine Saeedian*; Joseph A. Prahlow, MD*
12:00 p.m.	-	1:00 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**H49**	**An Evaluation of Sudden Deaths Due to Myocarditis: A Study of Autopsy Cases** *Xiang Zhang, MD*; Puping Lei, MD*; Rong Li*; Mary G. Ripple, MD; David R. Fowler, MD; Ling Li, MD**
11:30 a.m.	-	1:00 p.m.	**H50**	**A Case of Pulmonary Artery Dissection in a Woman With Chronic Pulmonary Hypertension** *Robyn Parks*; Lawrence Nguyen, MD*
11:30 a.m.	-	1:00 p.m.	**H51**	**Mal D'Afrique: The Mysteries of Endomyocardial Fibrosis in Western Countries** *Claudia Perrone, MD*; Alessio Ostuni, MD; Silvia Trotta; Andrea Andrea Marzullo, MD; Biagio Solarino, PhD*
11:30 a.m.	-	1:00 p.m.	**H52**	**Emphysematous Gastritis: A Rare Disease With a Fulminant Course** *Melissa E. Toeller-DeSimone, BS**
11:30 a.m.	-	1:00 p.m.	**H53**	**Cardiac Amyloidosis—Two Cases** *Stephen Peltier, BS*; Juliana Molosky*; Theodore T. Brown, MD; Joseph A. Prahlow, MD*
11:30 a.m.	-	1:00 p.m.	**H54**	**An Anomalous Origin of Right Coronary Artery as a Possible Cause of Sudden Cardiac Death in an Athlete: A Case Report** *Pauline Saint-Martin, MD, PhD*; Camille Rerolle, MD; Nemo Grasset, MD; Melanie Seignier, MD; Justine Canales, MD*
11:30 a.m.	-	1:00 p.m.	**H55**	**A Tell-Tale Heart: A Case of Takotsubo Cardiomyopathy at Autopsy** *Meredith A. Reynolds, MD*; Kyle G. Parker, MD; Kelly A. Pokrywiecki, BA, BS; Jefree J. Schulte, MD; Kammi J. Henriksen, MD; Aliya N. Husain, MBBS*
11:30 a.m.	-	1:00 p.m.	**H56**	**Autopsy Findings of Individuals Displaying Symptoms of Pica** *Heather M. McLendon*; Katie C. Donohue**
11:30 a.m.	-	1:00 p.m.	**H57**	**Unexpected and Sudden Cardiac Death Due to Eosinophilic Myocarditis (EM): Still a Difficult Task for Forensic Pathologists** *Rosario Barranco*; Davide Bedocchi, MD; Alessandro Bonsignore, MD, PhD*; Francesco Ventura, MD**

11:30 a.m. - 1:00 p.m. **H58** **An Unusual In-Custody Death**
*Baiyang Xu, MD**

11:30 a.m. - 1:00 p.m. **H59** **A Case of Fulminant Spontaneous Necrotizing Soft Tissues Infections (NSTI) of the Chest Wall in a Man With No Risk Factors**
Sara Gioia, MD; Valentina Rosati, MD*; Lisa Franceschetto, MD; Fabio Suadoni, MD*

11:30 a.m. - 1:00 p.m. **H60** **Acute Colonic Pseudo-Obstruction (ACPO) (Ogilvie Syndrome) Leading to Respiratory Compromise and Death**
John Dewey, BS; Joseph A. Prahlow, MD*

11:30 a.m. - 1:00 p.m. **H61** **Intramyocardial Lipoma of the Right Atrium: Two Cases Diagnosed at Forensic Autopsy**
Sydney C. Pawsey, BS; Wendy M. Gunther, MD*

11:30 a.m. - 1:00 p.m. **H62** **A Fatal Case of Chemical Peritonitis Caused by a Spontaneous Rupture of the Pancreatic Pseudocyst: A Forensic Approach**
Massimiliano Esposito, MD; Giuseppe Cocimano, MD*; Giuseppe D. Albano, MD; Aldo Liberto, MD; Diego Geraci, PhD; Martina Fichera, MD; Giulio Di Mizio, MD, PhD; Pasquale Malandrino, MD; Fabrizio Vanaria, MD; Monica Salerno, MD, PhD*

11:30 a.m. - 1:00 p.m. **H63** **Idiopathic Liver Rupture: An Italian Case Report**
Gianni De Giorgio; Fiorenza Zotti, PhD; Eloisa Maselli, MD; Davide Ferorelli; Francesca Donno, MD; Valeria Bruno, MD; Giulia Gubinelli; Alessandro Dell'Erba, PhD*

11:30 a.m. - 1:00 p.m. **H64** **A Determination of the Efficacy of Two Processing Methods for Molar Teeth as a Source of DNA in Missing Persons and Unidentified Human Remains (UHR) Investigations**
Lily Josephs, BS; Ira R. Titunik, DDS; Timothy M. Palmbach, JD; Angie Ambers, PhD*

11:30 a.m. - 1:00 p.m. **H65** **The Vitality of Skin Lesions in Decomposed Corpses: A Morphological and Immunohistochemical Study**
Matteo Moretti, MD; Fiorella Lanzillotta, MD; Elena Mercuri; Giada Pansardi; Luisa Andrello, MD; Gulnaz T. Javan, PhD; Antonio M.M. Osculati, MD; Silvia D. Visona, MD*

11:30 a.m. - 1:00 p.m. **H66** **Mendelian Simulation of Short Tandem Repeat (STR) Genotypes From Existing Sample Data to Create Standard Truth Pedigrees for Benchmarking New Familial Inference Methods**
Stephen Turner; Chris Hulme-Lowe, PhD; Chris Simpson; Carlos Acevedo, MS*

11:30 a.m. - 1:00 p.m. **H67** **An Investigation on Circular RNA (circRNA) Expression in Diabetic Cardiomyopathy (DCM) to Improve Understanding of Sudden Cardiac Death (SCD)**
Shengzhong Dong; Yiwen Shen*; Chunyan Tu**

11:30 a.m. - 1:00 p.m. **H68** **The Effects of Heat and Explosions on Forensic DNA Analyses**
*Marwan Khoury**
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **H69** **Creating a Real Time-Quantitative Polymerase Chain Reaction (RT-qPCR) -Based Method for Studying Temporal DNA Degradation in Waterlogged Bone**
Isis Thornton; D'Arcy P. Mays III; Baneshwar Singh, PhD; Claire M. Cartozzo, MS; Tal Simmons, PhD*

11:30 a.m. - 1:00 p.m. **H70** **Forensic DNA Phenotyping (FDP): A Prediction of Human Externally Visible Traits in Missing Person Identification**
Matteo Fabbri, MS; Letizia Alfieri, MD; Omar Bonato, MD; Mauro Coppone, MD; Paolo Frisoni, MD; Rosa Maria Gaudio; Elena Lucenti, MD; Chiara Marini, MD; Matteo Marti, PhD; Margherita Neri, MD, PhD*

11:30 a.m. - 1:00 p.m. **H71** **The Detection of Rat Decomposition Products in a Plywood Platform Following Specimen Removal**
Gabrielle E. DiEmma, BS; Heather L. Harris, JD; Karen S. Scott, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **H72** **Aquatic Decomposition of Vertebrate Remains: An Experimental Test for a Cold Case Investigation**
Joseph P. Receveur, BS; Sierra Kaszubinski, BS; Breanna R. Wydra, BA; Brianna Timmons, BS; Katelyn A. Smiles; Nicholas Babcock, MS; Courtney Weatherbee, MS; M. Eric Benbow, PhD*

11:30 a.m. - 1:00 p.m. **H73** **The Alterations of HMGB and Troponin in Postmortem Interval (PMI): The First Experimental Study on Humans and a Review of Literature**
Matteo A. Sacco, MD; Fabrizio Cordasco, MD; Francesco Sicilia, MD; Luigi De Aloe, MD; Carmen Scalise, MD; Natalia Malara, PhD; Ivan Presta, PhD; Pietrantonio Ricci, PhD; Roberto Raffaele, BE*; Santo Gratteri, MD; Isabella Aquila, MD. PhD*

11:30 a.m. - 1:00 p.m. **H74** **Fetoneonatal Deaths—The Role of Forensic Investigations and Differential Diagnosis for Solving Complicated Forensic Cases: A Rare Case of Infanticide**
Isabella Aquila, MD. PhD; Matteo A. Sacco, MD*; Fabrizio Cordasco, MD*; Francesco Sicilia, MD*; Roberto Raffaele, BE*; Carmen Scalise, MD*; Orazio Malfa, MD; Luigi De Aloe, MD; Santo Gratteri, MD; Pietrantonio Ricci, PhD*

11:30 a.m. - 1:00 p.m. **H75** **Bleach Decontamination in the Forensic Laboratory and at the Crime Scene: Investigating the Efficacy of DNA Damage in Native Versus Naked Templates**
Alyssa N. Tuccinardi; Angie Ambers, PhD*

11:30 a.m. - 1:00 p.m. **H76** **Vertebrate Scavenging Behavior and the Decay Rate of Buried Carcasses**
Luigi Mastrogiuseppe; Valentina Bugelli, MD; Carlo P. Campobasso, MD, PhD*; Francesco Porcelli, PhD*

11:30 a.m. - 1:00 p.m. **H77** **A Postmortem Interval (PMI) Estimation Based on Eukaryotic Community Associated With Soil Under Decomposing Porcine Remains**
Amanda M. Haase, BS; Shane Woolf, MS; Tal Simmons, PhD; Jenise Swall, PhD; Baneshwar Singh, PhD*

11:30 a.m. - 1:00 p.m. **H78** **Atrioesophageal Fistulas (AEF) Caused by Percutaneus and Surgical Radiofrequency Ablation for Atrial Fibrillation (AF)**
Emiliano G. Maresi, MD; Stefania Zerbo, MD; Elvira Ventura Spagnolo, MD; Pierangela Fleres, MD; Antonio Guajana, MD; Gennaro Baldino, MD; Antonina Argo, PhD*

11:30 a.m. - 1:00 p.m. **H79** **The Suitability of Cerebral Matter for the Forensic Identification of Highly Decomposed Bodies**
Katharina Helm, PhD; Bettina Dunkelmann, PhD; Stefan Pittner, PhD; Christian Staufer, PhD; Gabriele Kreindl, ING; Tamara Kastinger, BS; Eva Müller, BS; Waltraud Zahrer, BS; Ines Grießner, MSc; Jan Cemper-Kiesslich, PhD; Fabio Carlo Monticelli; Franz Neuhuber, PhD*

11:30 a.m. - 1:00 p.m. **H80** **Acute Gastric Dilatation After Binge Eating: Overlapping Complications Determining a Race Against Death**
Vittorio Gatto, MD; Federico Manetti, MD; Alessandro Santurro, MD; Matteo Scopetti, MD; Cemyigit Deveci, MD; Martina Padovano, MD; Mariantonia Di Sanzo, MD; Antonio Grande, MD, PhD*

11:30 a.m. - 1:00 p.m. **H81** **Stent Thrombosis After Percutaneous Coronary Intervention (PCI) in Spontaneous Coronary Artery Dissection (SCAD)**
Federico Manetti, MD; Cemyigit Deveci, MD; Matteo Scopetti, MD; Vittorio Gatto, MD; Alessandro Santurro, MD; Mariantonia Di Sanzo, MD; Antonio Grande, MD, PhD*

11:30 a.m. - 1:00 p.m. **H82** **The Relationship Between Wischnewski Spots and Stress Hormones During Hypothermia**
Alissa M. Shida, BS; Tomoya Ikeda, PhD, MD; Naoto Tani, MA; Takaki Ishikawa, MD, PhD; Kei Ikeda, MD; Aoki Yayoi, BA*

11:30 a.m. - 1:00 p.m. **H83** **New Biomarkers of Myocardial Necrosis Identification in Decomposed Bodies**
Pasquale Malandrino, MD; Francesco Amico, MD; Federico Patanè, MD; Angelo Montana, MD*; Dario Condorelli; Massimiliano Esposito, MD; Edmondo Scoto; Giulio Di Mizio, MD, PhD; Monica Salerno, MD, PhD; Cristoforo Pomara, MD, PhD*

Investigation and Identification

Moderator: *Veena D. Singh, MD*
Midwest Medical Examiner's Office
Ramsey, MN

Co-Moderator: *Pierre-Antoine Peyron, MD*
Département de Médecine Légale
Montpellier, FRANCE

1:00 p.m. - 1:15 p.m. **H84** **Viral Load: Handling an (Unexpectedly) High-Profile Case**
Kirstin E. Howell, MD; Kristin C. Escobar Alvarenga, MD*

1:15 p.m. - 1:30 p.m. **H85** **Increasing Transparency: The Utility of Layered Images in Postmortem Identification**
Farnaz Khalafi, MD; Brandi C. McCleskey, MD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:30 p.m. - 1:45 p.m. **H86** **An Interdisciplinary Approach to Data Collection of Unidentified Juvenile Remains at the Georgia Bureau of Investigation (GBI)**
Jonathan Eisenstat, MD; Alice F. Gooding, PhD*

1:45 p.m. - 2:00 p.m. **H87** **Lost and Found: Forensic Anthropology and the Recovery of a 21-Year-Old Plane Crash**
Kerianne Armelli, MS; Carolyn V. Isaac, PhD; Jane Wankmiller, PhD; Rachel E. Smith, BS*

2:00 p.m. - 2:15 p.m. **H88** **WITHDRAWN**

2:15 p.m. - 2:30 p.m. **H89** **The Complicated Recovery of a House Fire Victim in Northern Michigan**
Jane Wankmiller, PhD; Rachel E. Smith, BS; Carl W. Hawkins, MD*

2:30 p.m. - 2:45 p.m. **H90** **Selfie-Related Injuries and Deaths in Italy**
Sara Gioia, MD; Fabio Suadoni, MD; Dora Mirtella, MD; Mariano Cingolani, MD*

2:45 p.m. - 3:00 p.m. **H91** **The Introduction of a Mobile Application to Assist in the Evaluation and Investigation of Death Scenes in Forensic Medical Practice**
Gert Saayman, FCPath; Cornelia van Graan, MS*

3:00 p.m. - 3:15 p.m. **Break**

Decomposition and DNA

Moderator: *David O. Carter, PhD*
Chaminade University of Honolulu
Honolulu, HI

Co-Moderator: *Carl J. Schmidt, MD*
Wayne County Medical Examiner's Office
University of Michigan
Detroit, MI

3:15 p.m. - 3:30 p.m. **H92** **An Evaluation of Selected Hematopoietic Immunohistochemical Stains in Decedents in Varying States of Decomposition**
Catherine R. Miller, MD; Juan P. Olano, MD; Judith Aronson, MD; You-Wen Qian, MD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:30 p.m. - 3:45 p.m. **H93** **"Forens-OMICS": The Application of Omics Sciences to Forensic Investigations**
Noemi Procopio, PhD; Natalie R. Langley, PhD; Beatrix Dudzik, PhD; Paul Wood, PhD*

3:45 p.m. - 4:00 p.m. **H94** **Proteogenomics: Shifting Touch Sample Analysis Paradigms**
Curt Hewitt; Myles W. Gardner, PhD; Michael A. Freitas, PhD; August E. Woerner, PhD; Kathleen Q. Schulte, MS; Danielle S. LeSassier, PhD; Maryam Baniasad, BS; Andrew J. Reed, PhD; Megan E. Powals, BS; Alan R. Smith, BS; Nicolette C. Albright, MS; Benjamin C. Ludolph, Bs; Liwen Zhang, PhD; Leah Allen, BS; Katharina L. Weber, BS*

4:00 p.m. - 4:15 p.m. **H95** **Developing Biological Models for the Probabilistic Genotyping of Next Generation Sequencing (NGS) Data**
Kevin Cheng; Meng-Han Lin, PhD; Jo-Anne Bright, PhD; James M. Curran, PhD; John S. Buckleton, PhD*

4:15 p.m. - 4:30 p.m. **H96** **Decomposition Odor Production in a Tropical Savannah**
*Lena M. Dubois, MSc; Carlos A. Gutierrez, MS; David O. Carter, PhD; Jean-François M. Focant, PhD; Katelynn A. Perrault, PhD**

4:30 p.m. - 4:45 p.m. **H97** **Comparing Resolution of Mixtures by DNA Sequencing Using the Illumina® MiSeq® FGx System**
Michael Moretto, MS; Robin W. Cotton, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

4:45 p.m. - 5:00 p.m. **H98** **Seasonal Differences in Soil Chemistry and Biology Impacted by Long-Term Human Decomposition**
Lois S. Taylor, MS; Allison R. Mason, BS; Ernest C. Bernard, PhD; Mary C. Davis, MSc; Dawnie W. Steadman, PhD; Jennifer M. DeBruyn, PhD*

Thursday—Session II

Jay Dix Memorial Bonus Day

9:00 a.m. - 9:10 a.m. **H99** **Jay Dix Memorial Bonus Day Introduction**
Joseph A. Prahlow, MD; James R. Gill, MD*; Andrew M. Baker, MD*; Michael A. Graham, MD**

9:10 a.m. - 10:00 a.m. **H99** **Investigation of Environment-Related Deaths**
*Joseph A. Prahlow, MD**

10:00 a.m. - 10:15 a.m. **Break**

10:15 a.m.	-	11:05 a.m.	**H99**	**Blunt and Sharp Force Injuries** *James R. Gill, MD**
11:05 a.m.	-	12:00 p.m.	**H99**	**Asphyxia** *James R. Gill, MD**
12:00 p.m.	-	2:00 p.m.		**Lunch**
2:00 p.m.	-	3:00 p.m.	**H99**	**Firearm Injuries** *Andrew M. Baker, MD**
3:00 p.m.	-	3:50 p.m.	**H99**	**Deaths Temporally Related to Apprehension and Custody** *Michael A. Graham, MD**

Friday—Session I

Multidisciplinary Session: Pathology/Biology I & Toxicology—Part I

Moderator: *Dan T. Anderson, MS*
Colorado Bureau of Investigation
Arvada, CO

Co-Moderator: *Elisa N. Shoff, MS*
Miami-Dade Medical Examiner Department
Miami, FL

8:30 a.m.	-	8:45 a.m.	**K65**	**Accidental Acute Combined Drug Toxicity Involving Heroin and Fentanyl in a 10-Year-Old Child** *Joseph H. Kahl, MS*; Benjamin Mathis, MD; George W. Hime, MS; Diane Boland, PhD*
8:45 a.m.	-	9:00 a.m.	**H100**	**Volatile Substances Concentrations in Costal Cartilage in Relation to Blood and Urine** *Marcin Tomsia; Joanna Nowicka; Elzbieta Chelmecka; Joanna Wójcik; Magdalena Wos; Kornelia M. Drozdziok; Rafal Skowronek; Gulnaz T. Javan, PhD**
9:00 a.m.	-	9:15 a.m.	**K66**	**A Fatal Mono-Intoxication With 4-Fluoroisobutyrylfentanyl** *Roelof Oosting, PharmD; Lauriane Drouin; Rogier van der Hulst, PharmD; Ingrid Bosman, PhD**
9:15 a.m.	-	9:30 a.m.	**H101**	**The Relationship of Chronic Psychostimulant Use and Cardiovascular Disease** *Elly Riser, MD; Chamil Ariyaratne, MD, MBBS; Irfan Chaudhry, MD*; Caleb Banta-Green, PhD; Richard C. Harruff, MD, PhD*
9:30 a.m.	-	9:45 a.m.	**K67**	**Circumstances, Postmortem Findings, and Toxicology in a Series of Methoxyacetylfentanyl-Related Deaths** *Robert Kronstrand, PhD*; Svante Vikingsson, PhD*
9:45 a.m.	-	10:00 a.m.	**H102**	**Suicide by Acute Substance Intoxication: A Retrospective Analysis of Cases in Cook County, Illinois** *Lorenzo Gitto, MD*; Ponni Arunkumar, MD; Serenella Serinelli, MD**
10:00 a.m.	-	10:15 a.m.	**K68**	**Homicidal Paraquat-Induced Respiratory Failure: A Case Report and Overview of Paraquat Testing in the Forensic Setting** *Elaine J. Oldford, BS*; Theodore T. Brown, MD; Prentiss Jones, Jr., PhD; Kenneth D. Hutchins, MD*
10:15 a.m.	-	10:30 a.m.		**Break**

Multidisciplinary Session: Pathology/Biology I & Toxicology—Part II

Moderator: *Marilyn A. Huestis, PhD*
Huestis & Smith Toxicology, LLC
Severna Park, MD

Co-Moderator: *Loralie Langman, PhD*
Mayo Clinic
Rochester, MN

10:30 a.m. - 10:45 a.m. **H103** **Active Duty United States Military Deaths Due to 1,1-Difluoroethane Intoxication**
Sherry Jilinski, MD; Alice Briones, DO*; Eric T. Shimomura, PhD; George F. Jackson, PhD*

10:45 a.m. - 11:00 a.m. **K69** **Caught Looking: A High-Profile Vessel-Related Fatality in Miami, Florida**
Diane Boland, PhD; Joseph H. Kahl, MS; Jennifer Gonyea; George W. Hime, MS; Kenneth D. Hutchins, MD*

11:00 a.m. - 11:15 a.m. **H104** **Why the "Kontroversy"? Is Kratom a Killer? The Emergence of Mitragynine in Drug-Associated Deaths in West Tennessee**
Maxwell O. Rollins, MD; Erica Curry, MD*

11:15 a.m. - 11:30 a.m. **K70** **Urinary Metabolites in Fatal Intoxications With Methoxyacetylfentanyl Could Indicate Time Until Death**
Svante Vikingsson, PhD; Robert Kronstrand, PhD*

11:30 a.m. - 11:45 a.m. **H105** **Pediatric Poisonings: An Epidemiological Study**
Mete K. Gulmen, PhD, MD; Kenan Kaya; Ozgenur K. Tok, MD*

11:45 a.m. - 12:00 p.m. **H106** **An Opioid Analysis in "Natural" Manner Scene Inspection Cases**
Mary G. Ripple, MD; David R. Fowler, MD; Dawn Zulauf; Rebecca Phipps, PhD*

12:00 p.m. - 1:00 p.m. **Lunch**

Poster Session

11:30 a.m. - 1:00 p.m. **H107** **Fatal Excipient Lung Disease: An Autopsy Case Series**
Daniel Shapiro, MD; Amy V. Rapkiewicz, MD; Mark J. Shuman, MD*

11:30 a.m. - 1:00 p.m. **H108** **Loperamide Abuse: A Rising Public Health Concern?**
Ian J. Puffenberger, MD; Meredith A. Frank, MD; James Louis Caruso, MD*

11:30 a.m. - 1:00 p.m. **H109** **Body Packing of Narcotics Leading to Gastric Perforation and Death: A Case Report and Review of the Literature**
Daniel A. Kirsch, BA; Irini A. Scordi-Bello, MD, PhD*

11:30 a.m. - 1:00 p.m. **H110** **Anticoagulation and Exsanguination: A Case Series of Fatalities From Superficial Wounds in the Elderly**
Abigail L. Alexander, MD; Priya Banerjee, MD*

11:30 a.m. - 1:00 p.m. **H111** **2,4-Dinitrophenol Toxicity: A Cause of Death That Is Making a Comeback**
Allison Gaines; Christopher Gulledge, MD*

11:30 a.m. - 1:00 p.m. **H112** **Death by Intracorporeal Fentanyl Extravasation During the Replacement of an Intrathecal Pump**
Luisa Andrello, MD; Maria Teresa Pinorini, PhD; Elia Grata; Silvia D. Visona, MD; Antonio M.M. Osculati, MD*

11:30 a.m. - 1:00 p.m. **H113** **"Everybody Hurts": Fatal Anaphylactic Shock Induced by an Intramuscular Injection of Diclofenac**
Diana Bonuccelli, MD; Marco Conti, MD; Sara Niballi, MD; Alberto Mandoli, MD; Benedetta Baldari, MD; Stefano D'Errico, MD, PhD*

11:30 a.m. - 1:00 p.m. **H114** **Tri-Allelic Patterns of Short Tandem Repeats (STRs) on D21S11 and Penta D Observed in Three Paternity Testing Cases With Down Syndrome Diagnosed Children**
*Amir J. Hamuod**

11:30 a.m. - 1:00 p.m. **H115** **A Rare Autopsy Case of Inferior Mesenteric Artery Laceration Associated With Blunt Abdominal Trauma in a Physically Abused Child**
Alissa M. Shida, BS; Kei Ikeda, MD; Aoki Yayoi, BA; Naoto Tani, MA; Tomoya Ikeda, PhD, MD; Takaki Ishikawa, MD, PhD*

11:30 a.m. - 1:00 p.m. **H116** **Neonatal Pulmonary Arterial Hypertension (PAH): A Fatal Case of Noonan Syndrome (NS)**
Caterina Bosco, MD; Luana Bonaccurso, MD*; Greta Cena, MD; Lucia Tattoli, PhD; Caterina Petetta, MD; Giovanni Botta, MD; Giancarlo Di Vella, MD, PhD**

11:30 a.m. - 1:00 p.m. **H117** **Sudden Unexpected Death in Childhood: A Case Report of Fatal Acute Pancreatitis**
Fabio Innocenzi; Francesco Lupariello, MD*; Alessandro Gabriele; Giovanni Botta, MD; Giancarlo Di Vella, MD, PhD**

11:30 a.m. - 1:00 p.m. **H118** **Multifocal Intracranial Hemorrhage in Congenital Neurosyphilis: Autopsy Findings and Literature Review**
Michael Harrell, MD; Heather S. Jarrell, MD; Lauren A. Decker*

11:30 a.m. - 1:00 p.m. **H119** **A Peculiar Autopsy Case of Infrarenal Aortic Hypoplasia (AH) and Premature Atherosclerosis in a 13-Year-Old Male**
Valentina Rosati, MD; Sara Gioia, MD*; Massimo Lancia, MD*; Fabio Suadoni, MD*

11:30 a.m. - 1:00 p.m. **H120** **Histopathologic Changes in Placental Tissue Following Misoprostol Administration**
Angelina I. Phillips, MD; Daniel C. Butler, MD*; S. Erin Presnell, MD; Evelyn T. Brunner, MD; Ryan Cuff, MD*

11:30 a.m. - 1:00 p.m. **H121** **WITHDRAWN**

11:30 a.m. - 1:00 p.m. **H122** **WITHDRAWN**

11:30 a.m. - 1:00 p.m. **H123** **Pediatric Dorsal Root Ganglia Hemorrhages in a Resuscitated Canine Mauling**
Nathan S. Shaller, MD; Anna G. McDonald, MD; Patrick E. Lantz, MD*

11:30 a.m. - 1:00 p.m. **H124** **The Postmortem Microbiome: An Evaluation of 16S Ribosomal RNA (rRNA) Profiles**
Gulnaz T. Javan, PhD; Sheree J. Finley, PhD; DeEtta Mills, PhD*

11:30 a.m. - 1:00 p.m. **H125** **Simplified DNA Barcoding Strategy for Forensically Relevant Blow and Flesh Flies**
Joseph Truppi, BS; Sam Kwiatkowski, PhD; Michelle R. Sanford, PhD; Michael A. Donley, MS; Katherine Welch, MS; Roger Kahn, PhD*

11:30 a.m. - 1:00 p.m. **H126** **The Effect of Mass-Generated Heat on Larval Development: Implications for Postmortem Interval (PMI) Estimates**
Vivienne G. Heaton, PhD; Colin Moffatt; Tal Simmons, PhD*

11:30 a.m. - 1:00 p.m. **H127** **The Impact of Postmortem Microbiota on *Lucilia Sericata* Development**
Vadim Mesli, MD; Christel Neut, PhD; Valéry C. Hédouin, MD, PhD; Damien Charabidze, PhD; Didier Gosset, MD, PhD*

11:30 a.m. - 1:00 p.m. **H128** **A Survey of Bacterial Communities in Soil Associated With Porcine Remains**
Denise Wohlfahrt, BS; Kailey Babcock, BS; Shane Woolf, MS; Tal Simmons, PhD; Baneshwar Singh, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

11:30 a.m. - 1:00 p.m. **H129** **Cranial Hyperostosis and Neuropsychiatric Disorders: Is There a Correlation? A Comparison Between Forensic Cases and a Review of Literature**
Orazio Malfa, MD; Matteo A. Sacco, MD*; Luigi De Aloe, MD; Francesco Sicilia, MD; Fabrizio Cordasco, MD; Carmen Scalise, MD; Pietrantonio Ricci, PhD; Roberto Raffaele, BE*; Ludovico M. Abenavoli, PhD; Santo Gratteri, MD; Isabella Aquila, MD. PhD**

11:30 a.m. - 1:00 p.m. **H130** **Patient Misinterpretation of Findings Leads to Suicide**
Jack Stover; Joseph A. Prahlow, MD*

11:30 a.m. - 1:00 p.m. **H131** **Colonization Rates of Barnacles (Crustacea: Cirripedia) on Different Fabrics as a Tool for Forensic Investigation of Human Remains in a Marine Environment**
Elysia Tingey, BS; Jennifer Verduin, PhD; Ian Dadour, PhD; Paola A. Magni, PhD*

11:30 a.m. - 1:00 p.m. **H132** **The Applicability of FLIR® Thermal Imaging of Swine Decomposition During the Louisiana Summer**
Helen R. Carter, BS; Erin J. Watson-Horzelski, PhD*

11:30 a.m. - 1:00 p.m. **H133** **Maternal Death by Fire and Fetal Carboxyhemoglobin Levels**
Nicole D. Lee, MS; Theodore T. Brown, MD*

11:30 a.m. - 1:00 p.m. **H134** **The Mouse Thanatomicrobiome Is Highly Variable in Early Postmortem Intervals**
Taylor L. Smith; Molly B. Still, MS; Scott S. Crupper, PhD*

11:30 a.m. - 1:00 p.m. **H135** **A Fatal Hemorrhage From a Periumbilical Wound: A Case of Stabbing or a Rare Bleeding From a Caput Medusae?**
Francesca Frigiolini; Sara Lo Pinto, MD; Fiorella Caputo, MD*; Rosario Barranco*; Giulio Fraternali Orcioni, MD; Alessandro Bonsignore, MD, PhD*; Francesco Ventura, MD**

11:30 a.m. - 1:00 p.m. **H136** **Brain Damage and MicroRNA (miRNA) Dysregulation: An Experimental Study**
Francesco Sessa, MS; Francesca Maglietta, MD*; Giuseppe Bertozzi, MD*; Luigi Cipolloni, MD, PhD; Monica Salerno, MD, PhD; Pietrantonio Ricci, PhD; Cristoforo Pomara, MD, PhD*

11:30 a.m. - 1:00 p.m. **H137** **Under Pressure: A Small Italian Town Under Attack**
Michela Ferrara, MD; Francesca Maglietta, MD*; Margherita Neri, MD, PhD; Luigi Cipolloni, MD, PhD; Stefania De Simone, MD; Francesco Sessa, MS*; Giuseppe Bertozzi, MD**

11:30 a.m. - 1:00 p.m. **H138** **A Cold Bone Heart: A Rare Case of Death Due to Acute Myocarditis in a Subject Suffering From Chronic Constrictive Pericarditis**
Lorenzo Spagnolo, MD; Francesco Sessa, MS*; Francesca Maglietta, MD*; Pietrantonio Ricci, PhD; Alessandra Radogna, MD; Santina Cantatore; Irene Riezzo, MD, PhD; Giuseppe Bertozzi, MD**

11:30 a.m. - 1:00 p.m. **H139** **Using Culturomics to Investigate the Mouse Thanatomicrobiome**
Christi Meyer; Scott S. Crupper, PhD*

11:30 a.m. - 1:00 p.m. **H140** **An Accidental Asphyxiation by Christmas Lights in a Patient With Schizoaffective Disorder**
Corey A. Hornersmith, BS; Wendy M. Gunther, MD*

11:30 a.m. - 1:00 p.m. **H141** **When the Autopsy Is the Only Possibility to Obtain a Diagnosis: The Investigation of a Rare Case of Aortopulmonary Window (APW)**
Alessandro Santurro, MD; Cemyigit Deveci, MD; Matteo Scopetti, MD; Vittorio Gatto, MD; Federico Manetti, MD; Mariantonia Di Sanzo, MD; Antonio Grande, MD, PhD*

Tracking Traumatic Injury and Death

Moderator: *L.J. Dragovic, MD*
Oakland County Medical Examiner's Office
Pontiac, MI

Co-Moderator: *Tasha Zemrus Greenberg, MD*
Tarrant County Medical Examiner's Office
Fort Worth, TX

1:00 p.m. - 1:15 p.m. **H142** **A Comprehensive Review of the Pathology of Blunt Traumatic Spinal Cord Injury (TSCI) Resulting in Early Fatality**
Declan McGuone, MD; Nalin Leelatian, MD, PhD; Kristin Roman, MD*

1:15 p.m. - 1:30 p.m. **H143** **The Histomorphology of Cranial Fracture Healing: Preliminary Observations**
Jered B. Cornelison, PhD; Carolyn V. Isaac, PhD; Wendy L. Lackey-Cornelison, PhD; Brandy Shattuck, MD; Joyce L. deJong, DO; Amanda O. Fisher-Hubbard, MD; Theodore T. Brown, MD; Elizabeth A. Douglas, MD; Joseph A. Prahlow, MD*

1:30 p.m. - 1:45 p.m. **H144** **Rule Out Trauma: A Five-Year Retrospective Study on Natural Disease, External Trauma, and Manner of Death at the Harris County Institute of Forensic Sciences (HCIFS)**
Monica B. Patel, DO; Pramod Gumpeni, MD*

1:45 p.m. - 2:00 p.m. **H145** **Radically Invasive Projectile (R.I.P.) Ammunition: The Projectile With No Boundaries**
Lauren Havrilla, DO; Michelle B. Aurelius, MD*

2:00 p.m. - 2:15 p.m. **H146** **Suicides in Cook County, Illinois: A Four-Year Retrospective Study From 2015 to 2019**
Reema Khan, MD; Stephanie Powers, MD; Ponni Arunkumar, MD*

2:15 p.m. - 2:30 p.m. **H147** **Mississippi Organ and Tissue Recovery in High-Profile Medical Legal Cases**
Mark M. LeVaughn, MD; Taylor Phillips**

2:30 p.m. - 2:45 p.m. **H148** **Non-Natural Deaths on Hospital Property: A Five-Year Retrospective Review of Cases From Harris County, Texas (2014–2019)**
Brooke H. Blake, MD; Dwayne A. Wolf, MD, PhD; Merrill O. Hines III, MD*

2:45 p.m. - 3:00 p.m. **H149** **Autopsy Rates for Injury Deaths by Manner, Cause, and State in the United States From 2015 to 2017**
Margaret Warner, PhD; Marcus B. Nashelsky, MD; Holly Hedegaard, MD*

3:00 p.m. - 3:15 p.m. **Break**

Unusual and/or Confounding Deaths

Moderator: *Jacqueline L. Parai, MD*
Ottawa Hospital
Ottawa, ON, CANADA

Co-Moderator: *Natasha L. Grandhi, MD*
Georgia Bureau of Investigation
Decatur, GA

3:15 p.m. - 3:30 p.m. **H150** **Radically Invasive Projectiles (R.I.P.s) and Other Unusual Ammunition: A Case Series**
Elaine R. Amoresano, MD; Patricia Aronica, MD; David R. Fowler, MD*

3:30 p.m. - 3:45 p.m. **H151** **Severe Hemorrhagic Retinopathy and Retinoschisis Associated With Hypoxic Ischemic Brain Injury and Coagulopathy Due to Aspiration of Popcorn Kernels**
Patrick E. Lantz, MD; William T. Harrison, MD; Anna G. McDonald, MD*

3:45 p.m. - 4:00 p.m. **H152** **A Tale of Two Recreational Mummification Bondage Cases: Undetermined Versus Homicide**
Robyn Parks; Julie M. Huss-Bawab, MD; Matthew Miller, MD*

4:00 p.m. - 4:15 p.m. **H153** **Two Firework Fatalities in North and Central Texas**
Shante Hill; Tasha Zemrus Greenberg, MD*

4:15 p.m. - 4:30 p.m. **H154** **"Who Dismembers Mama?"**
Reema Khan, MD; Michael D. Eckhardt, MD; Adrienne Segovia, MD*

4:30 p.m. - 4:45 p.m. **H155** **Pull It Out or Leave It In? Foreign Bodies Discovered During Medicolegal Death Investigation**
*Christina M. Tengelin, MS**

4:45 p.m. - 5:00 p.m. **H156** **The Importance of Histopathology in Cases of Sudden Death Due to Alleged Electrocution With Inconclusive Autopsy Findings: A Report of Three Cases**
Siddhartha Das, MD; Pampa C. Toi, MD*

Friday—Session II

Microbiome and Forensic Entomology

Moderator: *David O. Carter, PhD*
Chaminade University of Honolulu
Honolulu, HI

Co-Moderator: *Jason H. Byrd, PhD*
University of Florida
Gainesville, FL

8:30 a.m. - 8:45 a.m. **H157** **Developing Novel Microbial Community Metrics for Predicting Manner of Death (MOD)**
Sierra Kaszubinski, BS; Jennifer L. Pechal, PhD; Heather R. Jordan, PhD; Carl J. Schmidt, MD; M. Eric Benbow, PhD*

8:45 a.m. - 9:00 a.m. **H158** **The Impact of Confinement in Vehicle Trunks on Decomposition and Entomological Colonization of Carcasses**
*Stacey L. Malainey, MA; Gail S. Anderson, PhD**

9:00 a.m. - 9:15 a.m. **H159** **Estimating the Postmortem Submersion Interval (PMSI) From the Microbiome of Bone in Lacustrine and Riverine Environments in Virginia**
Claire M. Cartozzo, MS; Baneshwar Singh, PhD; Jenise Swall, PhD; Tal Simmons, PhD*

9:15 a.m.	-	9:30 a.m.	**H160**	**Evaluating the Nearest Weather Station as the Best Representation of Scene Temperature in Forensic Entomology Casework** *Michelle R. Sanford, PhD*; Si Gao, MS*
9:30 a.m.	-	9:45 a.m.	**H161**	**The Impact of Insect Exclusion on Eukaryotic Community Succession on Porcine Remains** *Denise Wohlfahrt, BS*; Luisa V. Forger, MS; Michael Shane Woolf, MS; Tal Simmons, PhD; Baneshwar Singh, PhD*
9:45 a.m.	-	10:00 a.m.	**H162**	**Understanding the Role of the Thanatomicrobiota in the Decay of "Reproductive Organs" in Human Decomposition** *Gulnaz T. Javan, PhD*; Holly L. Lutz; Sheree J. Finley, PhD; Silvia D. Visona, MD; Antonio M.M. Osculati, MD; Jack A. Gilbert, PhD*
10:00 a.m.	-	10:15 a.m.	**H163**	**The Postmortem Clostridium Effect: A Thanatomicrobiome Investigation of Cadaver Brain** *Gulnaz T. Javan, PhD; Courtnee Bell, MS; Eloise H. Mikkonen, PhD; Sheree J. Finley, PhD*; Qiana Matthews, PhD*
10:15 a.m.	-	10:30 a.m.		**Break**

Postmortem Radiology

Moderator: *Giancarlo Di Vella, MD, PhD*
University of Torino, Department Public Health Sciences
Raleigh, NC

Co-Moderator: *Dianne Little, MBBS*
Forensic Medicine, Sydney
Lidcombe, AUSTRALIA

10:30 a.m.	-	10:45 a.m.	**H164**	**Postmortem Cardiac-Magnetic Resonance (PMCMR) Protocol in Sudden Cardiac Deaths (SCDs)** *Alessandro Santurro, MD*; Giovanni Donato Aquaro, MD; Michele Emdin, MD, PhD; Vittorio Fineschi, MD, PhD; Matteo Scopetti, MD; Benedetta Guidi, MD; Emanuela Turillazzi, MD, PhD; Marco Di Paolo, MD*
10:45 a.m.	-	11:00 a.m.	**H165**	**Radiodense Bullet Wipe (RBW) Around Skeletal Entrance Gunshot Wounds: The Frequency of Detection and Evaluation of Decedent, Wound, and Ammunition Characteristics** *Ashley Lukefahr, MD*; Jennifer M. Vollner, PhD; Bruce E. Anderson, PhD; David C. Winston, PhD*
11:00 a.m.	-	11:15 a.m.	**H166**	**Comparing Sinus Fluid Density in Drowning Versus Non-Drowning Victims Using Postmortem Computed Tomography (PMCT)** *Zuhha Ashraf, MD*; Catherine Yim, MD; Mariam Thomas, MD; Odey C. Ukpo, MD* *(FSF Emerging Forensic Scientist Award Oral Presentation)*
11:15 a.m.	-	11:30 a.m.	**H167**	**Heat-Induced Changes in Charred Human Remains** *Antonina Argo, PhD*; Giuseppe F. Lo Re, MD; Donatella Piscionieri; Ginevra Malta, MD; Alessia Vinci, MD; Agata Crapanzano, MD; Sergio Salerno*
11:30 a.m.	-	11:45 a.m.	**H168**	**Fatal Obstructive Asphyxia: Trans-Pulmonary Density Gradient Characteristic as a Relevant Identifier in Postmortem Computed Tomography (PMCT)** *Wolf Schweitzer; Lars C. Ebert, PhD*; Michael Thali, MD**
11:45 a.m.	-	12:00 p.m.	**H169**	**Using Postmortem Computed Tomography (PMCT) and Drug Screens to Triage Drug-Related Fatalities** *Lauren A. Decker*; Sarah Lathrop, DVM, PhD*
12:00 p.m.	-	1:00 p.m.		**Lunch**

Pediatric/Maternal Mortality

Moderator: *Robert F. Corliss, MD*
University of Wisconsin Hospital
Madison, WI

Co-Moderator: *Rudy J. Castellani, MD*
Western Michigan University School of Medicine
Kalamazoo, MI

1:00 p.m. - 1:15 p.m. **H170** **The Diagnostic Accuracy of Unexplained Intracranial Hemorrhage as an Indicator of Abusive Head Trauma in the Context of a Coagulopathy**
*Michael Freeman, MD, PhD; Ellen M.F. Strömmer, MPH**
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:15 p.m. - 1:30 p.m. **H171** **Pediatric Accidental Deaths in Cook County, Illinois**
Serenella Serinelli, MD; Ponni Arunkumar, MD; Lorenzo Gitto, MD**

1:30 p.m. - 1:45 p.m. **H172** **Histologic Findings of the Pancreas in Infant Deaths: A Review of Cases at the State of Maryland Office of the Chief Medical Examiner (MD OCME)**
Derek Musgrove; Nikki Mourtzinos, DO; David R. Fowler, MD*

1:45 p.m. - 2:00 p.m. **H173** **Retinal (RH) and Optic Nerve Sheath Hemorrhage (ONSH), Papilledema, and Spinal Cord Nerve Root/Ganglia Hemorrhage Associated With a Cerebral Cavernous Malformation**
Dongfang Yu, MD, PhD; Ryan T. Mott, MD; William J. Beuerlein, DO; Patrick E. Lantz, MD*

2:00 p.m. - 2:15 p.m. **H174** **Recognizing Congenital Syphilis: The Consequences of the Return of an Epidemic**
Jia Jun Guan, MD; Yulai Wang, MD; Julie M. Huss-Bawab, MD*

2:15 p.m. - 2:30 p.m. **H175** **Cervical Vertebral En Bloc Examination in Pediatric Deaths: The New York City Experience (2011–2019)**
Rebecca Folkerth, MD; Anne M. Laib, MD; Michelle Stram*

2:30 p.m. - 2:45 p.m. **H176** **Maternal Death Investigation in the Setting of Rising Maternal Mortality in the United States: Trends in Maryland From 2003 to 2019**
Colleen Klein, MD; Stephanie A. Dean, MD; David R. Fowler, MD*

2:45 p.m. - 3:00 p.m. **H177** **A Histological Study of Persistent Pulmonary Hypertension of the Newborn (PPHN): A Five-Year Retrospective Analysis of a Fatal Cause in Neonates**
Caterina Petetta, MD; Giovanni Botta, MD; Ezio Fulcheri, MD; Francesca Buffelli, PhD, MD; Niccolò D. Melloni, MD*; Giancarlo Di Vella, MD, PhD**

3:00 p.m. - 3:15 p.m. **Break**

Ancillary Studies and Anatomic Assessment

Moderator: *Katherine F. Maloney, MD*
Erie County Medical Examiner's Office
Buffalo, NY

Co-Moderator: *Ashley Lukefahr, MD*
The University of Arizona
Tucson, AZ

3:15 p.m. - 3:30 p.m. **H178** **The Utility of Postmortem Vitreous Beta-Hydroxybutyrate (BHB) Testing for Distinguishing Sudden From Prolonged Deaths and for Diagnosing Ketoacidosis**
Kristina-Ana Klaric, MD; Jacqueline L. Parai, MD; Chris Milroy, MD, LLB*

3:30 p.m. - 3:45 p.m. **H179** **3D Rendering of the Human Body: A Proposal of an Operative Protocol for the Application of Photogrammetry in the Autopsy Room**
Lorenzo Gitto, MD; Laura Donato*; Alessandro Di Luca, MD; Serenella Serinelli, MD*

3:45 p.m. - 4:00 p.m. **H180** **Electrolytes, Glucose, and Lactate in Postmortem Blood (BL), Vitreous Humor (VH), and Synovial Fluid (SF): A Comprehensive Study**
Supawon Srettabunjong, MD; Wantawanop Thongphap, BSc; Anchalee Chittamma*

4:00 p.m. - 4:15 p.m. **H181** **The Usefulness of a Hand-Held Blood Glucose and Ketone Monitoring Device as a Postmortem Indicator of Diabetic Ketoacidosis (DKA)**
Pierre-Antoine Peyron, MD; Maëlle Plawecki, PharmD; Jean-Paul Cristol, PhD; Maisy Lossois, MD; Eric Baccino, MD*

4:15 p.m. - 4:30 p.m. **H182** **Lung Weights in Carbon Monoxide (CO) -Related Fatalities**
Abigail J. Grande, MPH; Ann K. O'Neill, MPH; Amanda O. Fisher-Hubbard, MD*

4:30 p.m. - 4:45 p.m. **H183** **WITHDRAWN**

4:45 p.m. - 5:00 p.m. **H184** **Unrecognized Anatomical Larynx Variants May Lead to More Than 70% of False Larynx Fractures**
Joao E.S. Pinheiro, PhD, MD; Jose L. Cascallana, PhD; Benito Lopez de Abajo, MD; Xose L. Otero, PhD; María Sol Rodríguez-Calvo, PhD*

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**I1**	**Demons and (Mis)Diagnosis: A Cultural Case Study of Sleep Paralysis** *Melissa Piasecki, MD*; Elizabeth Phelan, BA**
11:30 a.m.	-	1:00 p.m.	**I2**	**A Mystic Religious Figure Who Became an Actress—From a Man of God to a Showgirl: A Particular Case of Circumvention of the Mentally Incapable Perpetrated Against a Couple, as Well as Crowds of People** *Ignazio Grattagliano, PsyD*; Antonello Bellomo, MD; Carla Piccininni, MD*
11:30 a.m.	-	1:00 p.m.	**I3**	**Mental Health and Stress Relating to Crime Scene Investigators (CSIs): A Lack of Training, Support, and Resources for CSIs** *Melanie Walchek, MFS*; Ismail M. Sebetan, MD, PhD*; Paul Stein, PhD**
11:30 a.m.	-	1:00 p.m.	**I4**	**A Rare Case of Psychotic Serial Killing by Poisoning** *Ilaria Rossetto, PhD*; Filippo Franconi, MD; Alan R. Felthous, MD; Giancarlo Di Vella, MD, PhD; Stefano Ferracuti; Giovanni De Girolamo; Marco Lagazzi; Felice F. Carabellese, MD*

Thursday

Big Data, Machine Learning, eHarm-FV

Moderator: *Emily D. Gottfried, PhD*
Medical University of South Carolina
Charleston, SC

Co-Moderator: *Giuseppe Troccoli, MD*
Mental Health Services
Bari, ITALY

8:30 a.m.	-	8:45 a.m.	**I5**	**Big Data and Machine Learning: Changing the Risk Assessment Landscape** *Casey Upfold, BA*; Gary A. Chaimowitz, MD; Mini Mamak, EdD*
8:45 a.m.	-	9:00 a.m.	**I6**	**The Electronic Hamilton Anatomy of Risk Management-Forensic Version (eHARM-FV): Launching the Fifth Generation of Risk Assessment** *Casey Upfold, BA; Gary A. Chaimowitz, MD; Mini Mamak, EdD**
9:00 a.m.	-	9:15 a.m.	**I7**	**Advancing Risk Assessment and Risk Management Using Analytics: The Electronic Hamilton Anatomy of Risk Management-Forensic Version (eHARM-FV)** *Casey Upfold, BA; Gary A. Chaimowitz, MD*; Mini Mamak, EdD*
9:15 a.m.	-	9:30 a.m.		**Break**

Characteristics of Forensic Patients and Review Boards

Moderator: *Joseph Chien, DO*
Virginia Portland Health Care System
Portland, OR

Co-Moderator: *Collin Lueck*
Los Angeles, CA

9:30 a.m.	-	9:45 a.m.	**I8**	**An Overview of Forensic Patients Within the Ontario Review Board (ORB) Patient Database** *Casey Upfold, BA*; Gary A. Chaimowitz, MD; Mini Mamak, EdD; Heather Marie Moulden, PhD; Katelyn Mullally*
9:45 a.m.	-	10:00 a.m.	**I9**	**Is the Canadian Review Board Effective? An Evolving Forensic System Depending on Case Laws** *Sebastien S. Prat, MD*; Gary A. Chaimowitz, MD*
10:00 a.m.	-	10:20 a.m.	**I10**	**The Legalization of Cannabis in the Canadian Review Board System** *Natalie M. Raso, MD*; Sebastien S. Prat, MD*
10:20 a.m.	-	10:35 a.m.		**Break**

Special Topics: Psychopathology of Refugees and Forensic Neurology

Moderator: *Casey Upfold, BA*
St. Joseph's Healthcare Hamilton
Hamilton, ON, CANADA

Co-Moderator: *Alden Parker*
Clemson, SC

10:35 a.m.	-	10:50 a.m.	**I11**	**An Increasing Demand for the Psychological Evaluation of Asylum Seekers** *Collin Lueck**
10:50 a.m.	-	11:20 a.m.	**I12**	**Recent/Proposed Legal Changes in Asylum Law and the Implications for Mental Healthcare** *Joseph Chien, DO*; Will Frizzell, MD**
11:20 a.m.	-	11:35 a.m.	**I13**	**A Neurological Condition and Forensic Psychiatry: A Case Report** *Sebastien S. Prat, MD*; Aline-Claire Huynh, BHSc; Jasreen Cheema, MD*
11:35 a.m.	-	1:00 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**I14**	**Differences Between Readmitted and Non-Readmitted Patients Discharged From Italian Psychiatric Security Facilities** *Filippo Franconi, MD*; Ilaria Rossetto, PhD; Alan R. Felthous, MD; Giancarlo Di Vella, MD, PhD; Massimo Clerici; Felice F. Carabellese, MD*
11:30 a.m.	-	1:00 p.m.	**I15**	**Identification of Risk and Protective Factors for Violent Behavior in a Population of Forensic Psychiatric Patient Offenders in the Apulian and Lucan Areas of Italy** *Felice F. Carabellese, MD*; Alan R. Felthous, MD; Gabriele Mandarelli, MD, PhD; Carmela Ascolillo; Fulvio Carabellese; Gianfranco Costantino, MD; Katia Di Matteo; Luigi Esposto, MD; Viola Ferrante; Domenico Guarino, MD; Gaetano Lusi, MD; Donatella La Tegola, PhD; Marika Leozappa; Angelo Liuni; Giusy Lombardo; Carmen Magistà; Giovanni Papa; Luigi Paparella; Mariella Partipilo, MD; Flavia Padalino; Francesca Pesola; Enzo Rubino, MD; Enzo Santospirito, MD; Mara Sciancalepore; Giuseppe Torchetti; Mariateresa Urbano; Roberto Catanesi, MD*
11:30 a.m.	-	1:00 p.m.	**I16**	**Women and Men Who Committed Murders: Male/Female Psychopathic Homicides** *Felice F. Carabellese, MD*; Alan R. Felthous, MD; Gabriele Mandarelli, MD, PhD; Domenico Montalbò; Fulvio Carabellese; Donatella La Tegola, PhD; Ilaria Rossetto, PhD; Filippo Franconi, MD; Roberto Catanesi, MD*
11:30 a.m.	-	1:00 p.m.	**I17**	**Sex Offenders and Psychopathy: A Study of an Italian Sample** *Donatella La Tegola, PhD; Ilaria Rossetto, PhD*; Filippo Franconi, MD*; Adriana Zito, MD; Fulvio Carabellese; Fabio Ferretti, MD; Anna Coluccia, MD*

Sexual Offenses

Moderator: *Sebastien S. Prat, MD*
St. Joseph's Healthcare, McMaster University
Hamilton, ON, CANADA

Co-Moderator: *Mini Mamak, EdD*
St. Joseph's Healthcare, Hamilton
Hamilton, ON, CANADA

1:00 p.m.	-	1:20 p.m.	**I18**	**Sexual Addiction and Deviant Sexual Behavior: Are They Comorbid Disorders?** *Ingrid Bertsch, MA*; Sebastien S. Prat, MD; Servane Barrault, PhD*
1:20 p.m.	-	1:35 p.m.	**I19**	**The Personality Assessment Inventory (PAI): Treatment Scales and Interpersonal Characteristics in a Sample of Men Charged With or Convicted of a Sexual Offense** *Alden Parker*; Emily D. Gottfried, PhD*
1:35 p.m.	-	3:00 p.m.	**I20**	**Frontotemporal Dementia and Sex Offending: Neurological Neuropsychiatric and Legal Issues** *Mohan Nair, MD*; Manish Fozdar, MD*; Wesley Maram, PhD*; Dean Decrisce, MD*; Jaime Coulter, JD*; Andrew LLoyd, JD**
3:00 p.m.	-	3:10 p.m.		**Questions & Answers**

Friday

Forensic Evaluation and Diversion

Moderator: *E. Thomas Lewis, MD*
Medical University of South Carolina
Charleston, SC

Co-Moderator: *George D. Annas, MD*
State University of New York
Upstate Medical University
Syracuse, NY

8:30 a.m. - 8:45 a.m.	**I21**	**When Crime and Illness Overlap: California's New Mental Health Diversion Plan, Assembly Bill 1810** *Torri L. Montgomery, MD** *(FSF Emerging Forensic Scientist Award Oral Presentation)*
8:45 a.m. - 9:00 a.m.	**I22**	**False Allegations of Sexual Abuse and Malpractice in Child Custody: A Big Court Case in Italy** *Laura Volpini, PhD*; Giuseppe Troccoli, MD*; Luigi Mignogna, MD*
9:00 a.m. - 9:45 a.m.	**I23**	**Brain Imaging in Death Penalty Mitigation** *Mohan Nair, MD*; Rob Friedman, JD*; Manish Fozdar, MD**
9:45 a.m. - 10:00 a.m.		**Break**
10:00 a.m. - 11:00 a.m.	**I24**	**You Saved My Butt: A Change in Jurisdiction for a Threat Against a Judge, and Why Forensic Psychiatrists Exist** *Vivian Chern Shnaidman, MD**
11:00 a.m. - 1:00 p.m.		**Lunch**

Poster Session

11:30 a.m. - 1:00 p.m.	**I25**	**The Influence of a Juror's Note-Taking on Other Jurors' Memories for Testimony** *Caitlin A. Pratt*; Jaclyn K. Maass, PhD*
11:30 a.m. - 1:00 p.m.	**I26**	**The Evaluation of Psychological Trauma of Individuals Who Escaped From Turkey Due to Human Rights Violations: Post-Traumatic Stress Disorder (PTSD)** *Alper Keten*; Johannes Nicolakis, MD; Ramazan Abaci, PhD*
11:30 a.m. - 1:00 p.m.	**I27**	**The Forensic Analysis of the State of Health in Prisoners: Is It Possible to Prevent Psychiatric Diseases and Suicide Risks in Prison?** *Fabrizio Cordasco, MD*; Carmen Scalise, MD; Isabella Aquila, MD. PhD*; Matteo A. Sacco, MD*; Francesco Sicilia, MD; Orazio Malfa, MD; Cristoforo Ricci, PhD; Luigi De Aloe, MD; Santo Gratteri, MD; Silvia Boca; Pietrantonio Ricci, PhD*

Competency to Stand Trial

Moderator: *Laura Volpini, PhD*
Rome, ITALY

Co-Moderator: *Vivian Chern Shnaidman, MD*
Princeton, NJ

1:00 p.m.	-	2:15 p.m.	**I28**	**The Charleston Mother Emanuel African Methodist Episcopal (AME) Church Shooter: Debating the Psychiatric Experts' Competency to Stand Trial Reports** *Christopher Fields, MD*; Emily D. Gottfried, PhD*; E. Thomas Lewis, MD*; Diana Mullis, MD**
2:15 p.m.	-	2:30 p.m.		**Break**
2:30 p.m.	-	3:30 p.m.	**I29**	**Competence in Competence: Myths, Misconceptions, and Avoiding Pitfalls** *George D. Annas, MD*; Corina Freitas, MD**

Saturday

Care, Outcomes, Crimes, Treatment, and Mental Illness

Moderator: *Natalie M. Raso, MD*
St. Joseph's Healthcare Hamilton
Hamilton, ON, CANADA

Co-Moderator: *Ingrid Bertsch, MA*
Centre Hospitalier Régional Universitaire de Tours
Tours, FRANCE

8:30 a.m.	-	9:00 a.m.	**I30**	**Schema-Focused Therapy (SFT) in Forensic Patients With Personality Disorders: A Theoretical Model and Recommendations for Best Clinical and Preliminary Findings of a Multicenter Randomized Clinical Trial in the Netherlands** *Melania Lugli, PhD*; Vivian Chern Shnaidman, MD*; Ariel V. Tabachnik, BS; Alessandra Draicchio, PsyD**
9:00 a.m.	-	9:15 a.m.	**I31**	**Suicide in a Mountainous Territory: A Ten-Year Retrospective Survey** *Serena Maria Curti, MD*; Pasquale Beltempo, MD*; Anna Maria Beoni, MD; Maurizio Castelli, MD; Valerio Ricci, MD, PhD; Mirella Gherardi, MD*
9:15 a.m.	-	9:30 a.m.	**I32**	**Maternal Filicide: A Descriptive and Follow-Up Study of 17 Women Hospitalized in a French Secure Unit Over a 23-Year Period** *Sophie Raymond, MD**
9:30 a.m.	-	9:45 a.m.	**I33**	**White-Collar Criminals: A Breed Apart?** *Matthew W. Motley, MD, PhD**
9:45 a.m.	-	10:00 a.m.		**Break**
10:00 a.m.	-	10:15 a.m.	**I34**	**Pathways to Readmission: Investigating Patient Perspectives in a Forensic Psychiatric Setting** *Shannon Kelley, PhD*; Natalie Armstrong Hoskowitz, PhD*; Kerri Kane, MA**
10:15 a.m.	-	10:45 a.m.	**I35**	**Shame Among Forensic Patients and the Potential Moderating Roles of the Social Determinants of Health** *Rusan Lateef, MSW*; Amina Ali, MD*; Fiona Moloney, BS**

Wednesday

Poster Session

11:30 a.m.	-	1:00 p.m.	**J1**	**A Fast Examination of Counterfeit Pharmaceutical Packaging Through Laser-Induced Breakdown Spectroscopy (LIBS) and Attenuated Total Reflectance/Fourier Transform Infrared (ATR/FTIR) Spectroscopy** *Emily A. Haase, BA, BS*; Mandy Ho, BS; Tatiana Trejos, PhD; Luis E. Arroyo, PhD* *(FSF Emerging Forensic Scientist Award Poster Presentation)*
11:30 a.m.	-	1:00 p.m.	**J2**	**Surface Roughness Measurement Techniques Using Pen Pressure Measurement in Signatures and Usability for Determination of Identity** *Dilara Oner, MS*; Gursel Cetin, PhD; Derya Dispinar, PhD*
11:30 a.m.	-	1:00 p.m.	**J3**	**Use of Raman Spectroscopy in Forensic Sciences to Authenticate Artworks Seized by Operation Lava Jato** *Carla D. Feliciano*; Evaldo Ribeiro; Ismael Heisler; Matheus Radaelli, MS; Marco A. Geus; Ricardo Mascarenhas; Fernando Comparsi; Fábio A.S. Salvador, PhD*

Thursday

Questioned Documents

Moderator: *Lloyd J. Josey, Jr., MSA*
Honolulu, HI

Co-Moderator: *Brenda N. Lanners, BS*
San Diego County Sheriff's Regional Crime Lab
San Diego, CA

8:30 a.m.	-	8:55 a.m.	**J4**	**The Authenticity of Questioned Pretty Good Privacy (PGP) -Signed Digital Documents** *Martin S. Olivier, PhD**
8:55 a.m.	-	9:15 a.m.	**J5**	**What's Old Is New Again: Portable Instant Photo Systems and Questioned Documents Redux** *Javaid Khan**
9:15 a.m.	-	9:40 a.m.	**J6**	**Delving Into Digitally Processed Documents: How Does Optical Character Recognition (OCR) Impact Documents?** *Nina Harnarine, BSc**
9:40 a.m.	-	10:40 a.m.	**J7**	**Application of the "Value of Evidence" Approach in Forensic Document Examination** *Miriam Angel, MS**
10:40 a.m.	-	11:00 a.m.		**Break**
11:00 a.m.	-	12:00 p.m.	**J8**	**Characteristics Observed in Impressions Produced by Signature Stamps** Jan Seaman Kelly, BA*
12:00 p.m.	-	1:00 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**J9**	**Testing the Perceptual Accuracy of a Subject's Ability to Identify Their Own Handwritten Numbers and Words** *Jacqueline Joseph**
11:30 a.m.	-	1:00 p.m.	**J10**	**Database Usage in Handwriting Comparisons** *Dilara Oner, MS*; Salih Cengiz, PhD; Gursel Cetin, PhD*
11:30 a.m.	-	1:00 p.m.	**J11**	**Education and Training in Forensic Document Analysis Offered as an Elective Course to Undergraduate Forensic Science Students in Turkey** *Sevil Atasoy, PhD*; Zekai Genç, PhD; Kaan Yilancioglu, PhD*

Questioned Documents

Moderator: *James A. Black, BS*
Lake Forest, CA

Co-Moderator: *Zain Bhaloo, MSc*
Canada Border Services Agency
Ottawa, ON, CANADA

1:00 p.m.	-	1:20 p.m.	**J12**	**Investigating the Interlaboratory Reproducibility of Magnetic Flux Measurements of Toners** *Carrie Polston, BA*; Williams Mazzella, PhD; Patrick Buzzini, PhD*
1:20 p.m.	-	1:50 p.m.	**J13**	**Decipherment of Latent Handwriting Impressions: Point/Counterpoint** *Thomas W. Vastrick, BS**
1:50 p.m.	-	2:10 p.m.	**J14**	**Infrared (IR) Luminescence With Different Paper Substrates** *Dennis J. Ryan, MBA**
2:10 p.m.	-	2:30 p.m.	**J15**	**X-Ray Cabinets Applied to Forensic Document Examination** *Samiah Ibrahim, BSc*; Tobin A. Tanaka, BS**
2:30 p.m.	-	3:00 p.m.	**J16**	**Practice Management Software: The Key to Staying Organized** *Linda L. Mitchell, BS**
3:00 p.m.	-	3:15 p.m.		**Break**
3:15 p.m.	-	3:30 p.m.	**J17**	**Forensic Document Examination: Early Incorporation of the Forensic Intelligence Paradigm** *Samiah Ibrahim, BSc**
3:30 p.m.	-	5:00 p.m.	**J18**	**Crossing Borders: Issues From Inter-Jurisdictional Casework** *Linton Mohammed, PhD*; Thomas W. Vastrick, BS*; Tobin A. Tanaka, BS*; Samiah Ibrahim, BSc**

Friday

Questioned Documents

Moderator: *Diane Kruger, JD*
Forensic Examiners Inc
Toronto, ON, CANADA

Co-Moderator: *Tobin A. Tanaka, BS*
Canada Border Services Agency
Ottawa, ON, CANADA

Co-Moderator: *Miriam Angel, MS*
Los Angeles Police Department
Questioned Documents
Los Angeles, CA

8:30 a.m.	-	11:30 a.m.	**J19**	**Developing a Frequency of Occurrence Proportion-Based Database in Forensic Science: A Template Using the Handwriting Database** *Thomas W. Vastrick, BS**
11:30 a.m.	-	11:45 a.m.		**Break**
11:45 a.m.	-	12:10 p.m.	**J20**	**Statistical Analysis of Handwriting: Probabilistic Outcomes for Closed-Set Writer Identification.** *Amy M. Crawford, MS*; Alicia L. Carriquiry, PhD; Danica Ommen, PhD*
12:10 p.m.	-	1:10 p.m.		**Lunch**

Poster Session

11:30 a.m.	-	1:00 p.m.	**J21**	**The Creation of Forged Promissory Notes Using the Signature Which Was for Different Purposes: A Case Report** *Dilara Oner, MS*; Abdi Ozaslan, MD; Gursel Cetin, PhD*
11:30 a.m.	-	1:00 p.m.	**J22**	**Writing Instrument Developments: Hybrid Pens, Rollerball Pens, and Mixable Fountain Pen Ink** *Tobin A. Tanaka, BS**
11:30 a.m.	-	1:00 p.m.	**J23**	**Detecting Backdated Documents Through Line Layout Approaches to Font Identification** *Thomas W. Phinney, MS, MBA**

Questioned Documents

Moderator: *Dennis J. Ryan, MBA*
Applied Forensics LLC
East Meadow, NY

Co-Moderator: *Nina Harnarine, BSc*
Forensic Examiners Inc
Toronto, ON, CANADA

1:10 p.m.	-	1:40 p.m.	**J24**	**The Interaction of Writing Profiles and Automated Scoring Rules** *Cami Fuglsby, MS*; Michael Caligiuri, PhD; Danica Ommen, PhD; Christopher P. Saunders, PhD; JoAnn Buscaglia, PhD*
1:40 p.m.	-	2:10 p.m.	**J25**	**Writer Classification of Handwritten Characters Using a Neural Network** *Yoko Seki, MA*; Yoshinori Akao; Shigeru Sugawara, PhD; Yoshiyasu Higashikawa, PhD*
2:10 p.m.	-	2:25 p.m.	**J26**	**Availability of Measurement of Ascender and Descender Parts of Letters in Determining the Gender of the Writer** *Dilara Oner, MS*; Gursel Cetin, PhD; Omer Kurtas, MD*
2:25 p.m.	-	2:40 p.m.	**J27**	**A Study of the Impact of a Primary Learned Handwriting Language on a Secondary Language** *Amanpreet Kaur, MSc*; Rakesh Kumar Garg, PhD*
2:40 p.m.	-	2:55 p.m.	**J28**	**Comparing Latin With Cyrillic Script in Handwriting Identification** *Andrea Ledic, MS**
2:55 p.m.	-	3:10 p.m.		**Break**
3:10 p.m.	-	4:40 p.m.	**J29**	**The Forensic Document Examiner (FDE) Forum** *Carl R. McClary, MS*; Samiah Ibrahim, BSc*; Jan Seaman Kelly, BA**
4:40 p.m.	-	4:55 p.m.		**Questions & Answers**

Wednesday

Toxicology Section Awardees Recognition *(by invitation only)*

6:30 p.m. - 7:30 p.m. *Supported by: UTAK*

Poster Session

Moderator: *Robert D. Johnson, PhD*
Tarrant County Medical Examiner's Office
Fort Worth, TX

Co-Moderator: *Amy Miles, BS*
Wisconsin State Lab of Hygiene
Madison, WI

7:30 p.m. - 9:00 p.m. **K1** **Identification of Fentanyl and Fentanyl Analogs by Using High-Resolution Mass Spectrometry and Machine Learning**
Yufei Chen, PhD; Xinyi Sui; Nelson R. Vinueza, PhD*

7:30 p.m. - 9:00 p.m. **K2** **An Evaluation of Screening for Drug Use Using Postmortem Prolactin (PRL) Levels in Serum and Cerebrospinal Fluid (CFS)**
Alissa M. Shida, BS; Naoto Tani, MA; Kei Ikeda, MD; Tomoya Ikeda, PhD, MD; Takaki Ishikawa, MD, PhD; Aoki Yayoi, BA*

7:30 p.m. - 9:00 p.m. **K3** **Metabolism and Estimation of Intake of Intravenous Nicotine Injection**
Alissa M. Shida, BS; Kei Ikeda, MD; Naoto Tani, MA; Tomoya Ikeda, PhD, MD; Takaki Ishikawa, MD, PhD; Aoki Yayoi, BA*

7:30 p.m. - 9:00 p.m. **K4** **A Validated Method for the Quantitative Determination of Anabolic Steroids in Urine by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)**
Shaiju Vareed, PhD; Ernest D. Lykissa, PhD*

7:30 p.m. - 9:00 p.m. **K5** **Cocaine Overdose: A Fatal Record**
Adriano Acella; Carmelinda Angrisani, MD; Giuseppe Strisciullo, BES; Francesco Introna, MD; Antonio De Donno, PhD*

7:30 p.m. - 9:00 p.m. **K6** **The Identification of Xylazine in a Patient Who Presented for Heroin Withdrawal**
Colin Appleford; Michael P. Smith, PhD*

7:30 p.m. - 9:00 p.m. **K7** **An Unusual Case of Suicide by Fluvoxamine Poisoning**
Jessica Quaiotti, MD; Matteo Moretti, MD; Claudia Carelli; Silvia D. Visona, MD; Gulnaz T. Javan, PhD; Claudia Vignali; Luca Tajana; Luca Morini; Antonio M.M. Osculati, MD*

7:30 p.m. - 9:00 p.m. **K8** **Delta-8-Tetrahydrocannabinol (Delta-8-THC): Increased Prevalence in Drug Seizure Cases and Impact on Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis of Biological Specimens**
Nicholas B. Tiscione, MS; Steven J. Williams, BS*; Diana M. Lawrence, MSFS*

7:30 p.m. - 9:00 p.m. **K9** **The Determination of the Organic Components of Newer Generation E-Cigarette Liquids**
Bailey Davis, BS, BA; Frank Dorman, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

7:30 p.m. - 9:00 p.m. **K10** **Driving Under the Influence of 1,1-Difluoroethane (DFE) and Marijuana**
*Aybike Dip, PhD; Ashraf Mozayani, PharmD, PhD**

7:30 p.m. - 9:00 p.m. **K11** **Driving Under the Influence (DUI) in the United States and Brazil**
*Aline T. Bruni; Ashraf Mozayani, PharmD, PhD**

7:30 p.m. - 9:00 p.m. **K12** **Methadone-Related Deaths: A Six-Year Study in a Major Italian City**
Stefano Errico; Davide Bedocchi, MD; Martina Drommi*; Rosario Barranco*; Alessandro Bonsignore, MD, PhD*; Francesco Ventura, MD**

7:30 p.m. - 9:00 p.m. **K13** **Comparison of Ethanol Concentrations in Blood and End-Expired Breath During a Controlled Drinking Study**
Sean Bortz, BS; Diane Kalscheur, BS; Lindsey K. Skaggs, BS; Heather Barkholtz, PhD*

7:30 p.m. - 9:00 p.m. **K14** **Longitudinal Transdermal Fentanyl Compared With Morphine Sulfate Treatments in a Rabbit *(Oryctolagus cuniculus)* Model System: Impacts on Behavior and Health**
Janna M. Andronowski, PhD; Adam J. Schuller, BS; Abigail R. LaMarca; Reed A. Davis, MS; Mary E. Cole, PhD; Gina R. Tubo*

7:30 p.m. - 9:00 p.m. **K15** **Fatal Formalin Intoxication in Thailand: A Case Report**
Kamonpan Limlek, MD; Arthit Surawisankun, MD; Peerayuht Phuangphung, PhD*

7:30 p.m. - 9:00 p.m. **K16** **Determination of Chiral Cathinone in Fresh Samples of *Catha Edulis***
*Abdulrhman M. Dhabbah, PhD**

7:30 p.m. - 9:00 p.m. **K17** **A Targeted Qualitative Screen for the Detection of Pesticides in Postmortem Specimens by Ultra High Performance Liquid Chromatography-Ion Trap-Mass Spectrometry (UHPLC-Ion Trap-MS^n)**
Marissa J. Finkelstein, MS; Elisa N. Shoff, MS; Joseph H. Kahl, MS; George W. Hime, MS; Diane Boland, PhD*

7:30 p.m. - 9:00 p.m. **K18** **Application of Biochip Array Technology to the Simultaneous Screening of Drugs From a Single Hair Sample Using the Biochip Analyzer Evidence Investigator**
*Pankaj Sinha**

7:30 p.m. - 9:00 p.m. **K19** **Driving Under the Influence of Alcohol (DUI) and Drugs (DUID) in Southern Italy: Case Reports Showing the Necessity of a Multidisciplinary Protocol to Prove DUI and DUID**
Ciro Di Nunzio, PhD; Aldo Di Nunzio*; Michele Di Nunzio*; Pietrantonio Ricci, PhD*

7:30 p.m. - 9:00 p.m. **K20** **AH-7921 and U-47700 Series Analogs: Spectroscopic Characterization and mu-Opioid Receptor Pharmacology**
John L. Krstenansky, PhD; Alexander C. Zambon, PhD; Thomas Hsu, PhD; Jayapal Reddy Mallareddy*

7:30 p.m. - 9:00 p.m. **K21** **Screening of New Psychoactive Substances (NPS) in Human Plasma Using Magnetic Solid Phase Extraction (m-SPE) by Liquid Chromatography/Quadrupole Time-of-Flight/Mass Spectrometry (LC/qTOF/MS)**
*Hee-Sun Chung, PhD**

7:30 p.m. - 9:00 p.m. **K22** **Evaluation of Sample Preparation Techniques for the Detection and Quantitation of Benzodiazepines in Human Urine and Whole Blood Using High-Performance Liquid Chromatography/Tandem Mass Spectrometry (HPLC-MS/MS)**
Cassandra A. Swart, MS; Mikayla Caldwell, MS*; Michael Moretto, MS; Andrew D. Ziegler, MS; Jenna Gardner, BA; Nichole D. Bynum, MS; Katherine Moore Bollinger, MS; Sabra R. Botch-Jones, MS*

7:30 p.m. - 9:00 p.m. **K23** **Calculation of Potential Lactate/Lactate Dehydrogenase (LDH) Interference With Alcohol-Dehydrogenase (ADH)-Based Ethanol Assay**
Amanda K. Will, BS; Sandra C. Bishop-Freeman, PhD; Julia C. Liebl, BA; Robert H. Powers, PhD*

7:30 p.m. - 9:00 p.m. **K24** **Fatal Unintentional Cocaine Overdose: The Importance of a Forensic Scene Investigation**
Giuliana D'anna; Antonio De Donno, PhD; Giuseppe Strisciullo, BES; Francesco Introna, MD*

7:30 p.m. - 9:00 p.m. **K25** **Presumptive Identification of Nitrite by Griess Reagent Test Strips—Applications in Suicide Investigations**
Jessica Hvozdovich, MS; Meagan L. Wisniewski, PhD; Jennifer L. Hoyer, MS; Chris W. Chronister, PhD; Bruce A. Goldberger, PhD*

7:30 p.m. - 9:00 p.m. **K26** **The Detection and Quantification of Tianeptine in Postmortem Blood and Urine**
Justin L. Poklis, BS; Janet Schultz, PhD; Michele T. Stauffenberg, MD; Carl E. Wolf II, PhD*

7:30 p.m. - 9:00 p.m. **K27** **Attribution Signatures for the Sourcing of Dokha and Dokha-Infused Tobacco Products**
Orianna Thomas, BS; Ellen Hondrogiannis, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

7:30 p.m. - 9:00 p.m. **K28** **Assessment of *In Vitro* Methemoglobinemia Formation in Infant Samples**
Frederick Strathmann, PhD; Cherie M. Trail, BS; Emily Fenton, BA; Laura M. Labay, PhD*

7:30 p.m. - 9:00 p.m. **K29** **Drug Trends in Korea and the Detection of Synthetic Cannabinoids in the Hair of Drug Abusers**
*Byungseok Cho, PhD; Jeonghyun Kim, MS; Ilung Seol, PhD; Seung Kyung Baeck, PhD; Eunmi Kim, PhD**

7:30 p.m. - 9:00 p.m. **K30** **Electrochemical Detection of Fentanyl Using Screen-Printed Carbon Electrodes With Confirmatory Analysis of Fentanyl and Its Analogs in Oral Fluid Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)**
Colby E. Ott, MS; Hugo Cunha-Silva, PhD; Joseph A. Cox, MS; Julia Arcos-Martínez, PhD; Luis E. Arroyo, PhD*

7:30 p.m. - 9:00 p.m. **K31** **Frequency of Gabapentin in Postmortem Cases Screened by Enzyme-Linked Immunosorbent Assay (ELISA)**
Denice M. Teem, BS; Daniel S. Isenschmid, PhD*

7:30 p.m. - 9:00 p.m. **K32** **Comparison of Data Acquisition Methods for High Resolution Mass Spectrometry (HRMS) Drug Screening**
Jessica L. Ayala, MSFS; Sarah Kerrigan, PhD*

7:30 p.m. - 9:00 p.m. **K33** **Analysis of Cannabinoids in Vitreous Fluid**
Haley Berkland, BA; Erin B. Divito, PhD; Christopher B. Divito, PhD; Frederick W. Fochtman, PhD; Stephanie J. Wetzel, PhD*

7:30 p.m. - 9:00 p.m. **K34** **Chiral Separation of Methylphenidate, Ethylphenidate, and Ritalinic Acid in Blood**
Christina Smith, BS; Madeleine J. Swortwood, PhD*
(FSF Emerging Forensic Scientist Award Poster Presentation)

7:30 p.m. - 9:00 p.m. **K35** **Scientific and Careful Setting Up of a Lethal Oleander Leaves Infusion**
Giulia Gubinelli; Francesca Donno, MD; Gianni De Giorgio; Ilaria Lacavalla, MD; Alessandro Dell'Erba, PhD*

7:30 p.m. - 9:00 p.m. **K36** **Comparison of Manual Protein Precipitation and Automated Protein Precipitation Using DPX Low Porosity Tips in Blood, Urine, and Tissues**
*Danielle C. Mata, MS**

7:30 p.m. - 9:00 p.m. **K37** **Variability in Direct Analysis in Real Time-High Resolution Mass Spectrometry (DART®-HRMS) Instrument Parameter Optimization Due to Molecular Identity**
Jessica L. Sprague, MS; Candice Bridge, PhD*

7:30 p.m. - 9:00 p.m. **K38** **High-Throughput Screening of Drugs of Abuse in Biofluids via 96-Solid-Phase Microextraction and Transmission Mode Direct Analysis in Real Time-Mass Spectrometry (TM-DART®-MS)**
Frederick Li, MS; Paul Liang, BS; Brittany Laramee, BS; Brian Musselman, PhD*

7:30 p.m. - 9:00 p.m. **K39** **Comprehensive Analysis of 34 Fentanyl Analogs Including Carfentanil From Liver Tissue Using Quick, Easy, Cheap, Effective, Rugged, and Safe (QuEChERS) and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis**
Kylea M. Mathison; Joseph A. Cox, MS*; Colby E. Ott, MS; Joseph A. DelTondo, DO; James C. Kraner, PhD; Kristen M. Bailey, MS; Myron A. Gebhardt, MS; Luis E. Arroyo, PhD*

7:30 p.m. - 9:00 p.m. **K40** **Validation and Comparison of Three Sample Preparation Techniques for Quantitation of Amobarbital, Butalbital, and Phenobarbital in Blood and Urine Using Ultra-Fast Liquid Chromatograph/Tandem Mass Spectrometry (UFLC/MS/MS)**
Chi Hin Marco Chan; Monique Oles; Nichole D. Bynum, MS; Sabra R. Botch-Jones, MS*
(FSF Emerging Forensic Scientist Award Poster Presentation)

7:30 p.m. - 9:00 p.m. **K41** **Determination of Synthetic Cannabinoids AB Pinaca and AB-Fubinaca With Disposable Screen Printed Carbon Electrodes (SPCE) Modified With Nanoparticles and Enzymes**
Miriam Barquero Quirós, PhD; Luis E. Arroyo, PhD; Julian Portuguez*

7:30 p.m. - 9:00 p.m. **K42** **A Fatal Case of Body Stuffer Syndrome**
Francesca Iannaccone; Costanza Filomena; Alice Chiara Manetti, MD; Sara Turco, MD*

7:30 p.m. - 9:00 p.m. **K43** **A Different Approach in the Estimation of the Time Since Death: Concurrence of Thanatochronological and Toxicological Data in a Case of Cocaine Assumption-Related Death**
Luigi Papi; Fabio Stefanelli; Silvio Chericoni; Alice Chiara Manetti, MD; Costanza Filomena; Francesca Iannaccone*

7:30 p.m. - 9:00 p.m. **K44** **Determination of Nicotine and Cotinine in Saliva**
Sultan M. Büyüker; Kaan Yilancioglu, PhD*; Rabia Aydin, BS*; Sevil Atasoy, PhD**

7:30 p.m. - 9:00 p.m. **K45** **The Detection and Quantification of Fentanyl in *Phormia Regina* (Calliphoridae) and Its Effects on Growth and Developmental Rate**
Brianna L. Robinson; Ian Dadour, PhD; Karen S. Scott, PhD; Sabra R. Botch-Jones, MS*

Thursday

Annual Lectureship in Toxicology (Not Eligible for CE Credit)

Moderator: *Sabra R. Botch-Jones, MS*
Boston University School of Medicine
Boston, MA

Co-Moderator: *Madeleine J. Swortwood, PhD*
Sam Houston State University
Huntsville, TX

9:00 a.m. - 10:00 a.m. **The Effects of Low Blood Alcohol Concentrations on Human Performance and Behavior**
Dary D. Fiorentino, PhD
Van Nuys, CA

10:00 a.m. - 10:30 a.m. **Break**

Drugs and Driving Special Session

Moderator: *Dayong Lee, PhD*
Houston Forensic Science Center
Houston, TX

Co-Moderator: *Michael R. Corbett, PhD, LLM*
University of Ontario
Mississauga, ON, CANADA

10:30 a.m. - 10:45 a.m. **K46** **Emergence of Delta-8 Tetrahydrocannabinol (THC) in Driving Under the Influence of Drugs (DUID) Investigation Casework**
Ayako Chan-Hosokawa, MS; Loan Nguyen, BS; Renee L. LaFord, MS; Wendy R. Adams, PhD*

10:45 a.m. - 11:00 a.m. **K47** **A Seven-Year Review of Vehicular Crash Toxicology Data at the West Tennessee Regional Forensic Center**
Elizabeth C. Conner, MPH, CHES; Erica Curry, MD*

11:00 a.m. - 11:15 a.m. **K48** **Toxicological Findings and Demographics of Phencyclidine (PCP) Use in Houston From 2013 to 2018**
Dayong Lee, PhD; Peter R. Stout, PhD*

11:15 a.m. - 11:30 a.m. **K49** **WITHDRAWN**

11:30 a.m. - 11:45 a.m. **K50** **The Effects of Synthetic Cannabinoids and Poly-Drug Use on Drug Recognition Expert Evaluations**
Amanda L.A. Mohr, MSFS; Judith Rodriguez Salas, MS; Alex J. Krotulski, MS; David Andrascik, BS; Barry K. Logan, PhD*

11:45 a.m. - 1:00 p.m. **Lunch**

Drug Trends

Moderator: *Dustin Tate Yeatman, MS*
West Palm Beach, FL

Co-Moderator: *Michael Wagner, MS, PA*
Fort Lauderdale, FL

1:00 p.m. - 1:15 p.m. **K51** **The National Forensic Laboratory Information System (NFLIS) Survey Findings: Toxicology Testing Practices by Toxicology Laboratories and Medical Examiner and Coroner Offices**
DeMia P. Pressley, MS; Liqun Wong, MS; Terrence Boos, PhD; BeLinda J. Weimer, MA; Hope Smiley-McDonald, PhD; Katherine Moore Bollinger, MS; Megan Grabenauer, PhD; Jeffrey M. Ancheta, BS; Neelima Kunta, BS; David Heller, BS; Jeri D. Ropero-Miller, PhD*

1:15 p.m. - 1:30 p.m. **K52** **Data-Supported Poly-Drug Use Among Fentanyl Users: A Toxicology Perspective**
Alex J. Krotulski, MS; Susan Varnum, PhD; Barry K. Logan, PhD*

1:30 p.m. - 1:45 p.m. **K53** **New Trends in Lysergic Acid Diethylamide (LSD) Use and Recommendations for Analysis**
Ryanne Brown, MSFS; Jeff Walterscheid, PhD; Jessica L. Knittel, MS*

1:45 p.m. - 2:00 p.m. **K54** **Xylazine Alone and in Combination With Opioid Drugs in Forensic Toxicology Casework**
Sherri L. Kacinko, PhD; Edward J. Barbieri, PhD*

2:00 p.m. - 2:15 p.m. **K55** **The Persistence of 3-Methylfentanyl (3-MF) in Pennsylvania**
Donna M. Papsun, MS; Melissa Fogarty, MSFS; Sherri L. Kacinko, PhD; Barry K. Logan, PhD*

2:15 p.m. - 2:30 p.m. **K56** **The Quantitation of N-Ethylpentylone (Ephylone) in Blood Samples From Victims of Suspected Drug-Facilitated Sexual Assault**
Lisa J. Reidy, PhD; Kristin W. Kahl, MS; Alex Giachetti, BS; Diane Boland, PhD*

2:30 p.m. - 2:45 p.m. **K57** **Buprenorphine-Related Deaths in North Carolina From 2010 to 2018**
Sandra C. Bishop-Freeman, PhD; Laura Friederich; Marc Feaster, BS*; Christopher T. Garrell, BS; Michelle B. Aurelius, MD; Jason S. Hudson, PhD*

2:45 p.m. - 3:00 p.m. **Break**

Novel Psychoactive Substances

Moderator: *Michael P. Stypa, MS*
Las Vegas Metropolitan Police Department
Las Vegas, NV

Co-Moderator: *Marissa J. Finkelstein, MS*
Miami-Dade Medical Examiner Department
Miami, FL

3:00 p.m. - 3:15 p.m. **K58** **Evaluation of the Long-Term Stability of Select Phenylacetylindole, Cycloalkyolindole, Quinolinyl, and Carboxamide Synthetic Cannabinoids in Human Whole Blood Using Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)**
Erika Phung, BS; Katherine Moore Bollinger, MS; Sabra R. Botch-Jones, MS; Daniel Lee, MS; Cassandra A. Swart, MS; Megan Grabenauer, PhD; Nichole D. Bynum, MS*
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:15 p.m. - 3:30 p.m. **K59** **The Quantitative Analysis of Fentanyl and Fentanyl Analogs in Hair**
Ryan B. Paulsen, PhD; Michael I. Schaffer, PhD; Virginia Hill, BS; Neil Stowe, PhD; Judy Guan, BS*

3:30 p.m. - 3:45 p.m. **K60** **Physiochemical Characterization of 19 Fentalogs: Lipophilicity**
Madison R. Schackmuth, BS; Sarah Kerrigan, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

3:45 p.m. - 4:00 p.m. **K61** **Identification of Mitragyna Alkaloids and Metabolites as Biomarkers of Kratom Use in Postmortem Urine Samples**
Stephanie Basiliere, BS; Sarah Kerrigan, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

4:00 p.m. - 4:15 p.m. **K62** **Rapid Detection and Separation of Isomeric Fentanyl Analogs Using Gas Chromatography-Atmospheric Pressure Chemical Ionization-Trapped Ion Mobility-Time of Flight/Mass Spectrometry (GC-APCI-TIMS-TOF/MS)**
Elisa N. Shoff, MS; Cesar E. Ramirez, PhD; Juergen Kempf, PhD; Francisco A. Fernandez-Lima, PhD*

4:15 p.m. - 4:30 p.m. **K63** **Determination of Novel and Non-Routine Benzodiazepines and Suvorexant in Whole Blood by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)**
Luke Garcia; Nicholas B. Tiscione, MS; Dustin Tate Yeatman, MS; Lauren L. Richards-Waugh, PhD*

4:30 p.m. - 4:45 p.m. **K64** **Fentanyl Epidemic on the West Coast: Accidental Overdose Death Trends in San Francisco From 2008 to 2019**
Kelsa L. West, MS; Luke N. Rodda, PhD*

Toxicology Open Forum (Not Eligible for CE Credit)

7:00 p.m. - 9:00 p.m. *Supported by:* *Thompson Instrument Company*
Waters Corporation

Friday

Multidisciplinary Session: Pathology/Biology I & Toxicology—Part I

Moderator: *Dan T. Anderson, MS*
Colorado Bureau of Investigation
Arvada, CO

Co-Moderator: *Elisa N. Shoff, MS*
Miami-Dade Medical Examiner Department
Miami, FL

8:30 a.m. - 8:45 a.m. **K65** **Accidental Acute Combined Drug Toxicity Involving Heroin and Fentanyl in a 10-Year-Old Child**
Joseph H. Kahl, MS; Benjamin Mathis, MD; George W. Hime, MS; Diane Boland, PhD*

8:45 a.m. - 9:00 a.m. **H100** **Volatile Substances Concentrations in Costal Cartilage in Relation to Blood and Urine**
*Marcin Tomsia; Joanna Nowicka; Elzbieta Chelmecka; Joanna Wójcik; Magdalena Wos; Kornelia M. Drozdziok; Rafal Skowronek; Gulnaz T. Javan, PhD**

9:00 a.m. - 9:15 a.m. **K66** **A Fatal Mono-Intoxication With 4-Fluoroisobutyrylfentanyl**
*Roelof Oosting, PharmD; Lauriane Drouin; Rogier van der Hulst, PharmD; Ingrid Bosman, PhD**

9:15 a.m.	-	9:30 a.m.	**H101**	**The Relationship of Chronic Psychostimulant Use and Cardiovascular Disease** *Elly Riser, MD; Chamil Ariyaratne, MD, MBBS; Irfan Chaudhry, MD*; Caleb Banta-Green, PhD; Richard C. Harruff, MD, PhD*
9:30 a.m.	-	9:45 a.m.	**K67**	**Circumstances, Postmortem Findings, and Toxicology in a Series of Methoxyacetylfentanyl-Related Deaths** *Robert Kronstrand, PhD*; Svante Vikingsson, PhD*
9:45 a.m.	-	10:00 a.m.	**H102**	**Suicide by Acute Substance Intoxication: A Retrospective Analysis of Cases in Cook County, Illinois** *Lorenzo Gitto, MD*; Ponni Arunkumar, MD; Serenella Serinelli, MD**
10:00 a.m.	-	10:15 a.m.	**K68**	**Homicidal Paraquat-Induced Respiratory Failure: A Case Report and Overview of Paraquat Testing in the Forensic Setting** *Elaine J. Oldford, BS*; Theodore T. Brown, MD; Prentiss Jones, Jr., PhD; Kenneth D. Hutchins, MD*
10:15 a.m.	-	10:30 a.m.		**Break**

Multidisciplinary Session: Pathology/Biology I & Toxicology—Part II

Moderator: *Marilyn A. Huestis, PhD*
Huestis & Smith Toxicology, LLC
Severna Park, MD

Co-Moderator: *Loralie Langman, PhD*
Mayo Clinic
Rochester, MN

10:30 a.m.	-	10:45 a.m.	**H103**	**Active Duty United States Military Deaths Due to 1,1-Difluoroethane Intoxication** *Sherry Jilinski, MD*; Alice Briones, DO*; Eric T. Shimomura, PhD; George F. Jackson, PhD*
10:45 a.m.	-	11:00 a.m.	**K69**	**Caught Looking: A High-Profile Vessel-Related Fatality in Miami, Florida** *Diane Boland, PhD*; Joseph H. Kahl, MS; Jennifer Gonyea; George W. Hime, MS; Kenneth D. Hutchins, MD*
11:00 a.m.	-	11:15 a.m.	**H104**	**Why the "Kontroversy"? Is Kratom a Killer? The Emergence of Mitragynine in Drug-Associated Deaths in West Tennessee** *Maxwell O. Rollins, MD*; Erica Curry, MD*
11:15 a.m.	-	11:30 a.m.	**K70**	**Urinary Metabolites in Fatal Intoxications With Methoxyacetylfentanyl Could Indicate Time Until Death** *Svante Vikingsson, PhD*; Robert Kronstrand, PhD*
11:30 a.m.	-	11:45 a.m.	**H105**	**Pediatric Poisonings: An Epidemiological Study** *Mete K. Gulmen, PhD, MD*; Kenan Kaya; Ozgenur K. Tok, MD*
11:45 a.m.	-	12:00 p.m.	**H106**	**An Opioid Analysis in "Natural" Manner Scene Inspection Cases** *Mary G. Ripple, MD*; David R. Fowler, MD; Dawn Zulauf; Rebecca Phipps, PhD*
12:00 p.m.	-	1:00 p.m.		**Lunch**

General Toxicology

Moderator: *Karen S. Scott, PhD*
Arcadia University
Glenside, PA

Co-Moderator: *Timothy P. Rohrig, PhD*
Wichita, KS

1:00 p.m. - 1:15 p.m. **K71** **Identification and Quantification of Classic, Prescription, and Synthetic Opioids in Hair by Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)**
Natalia A. Platosz, BS; Marta Concheiro-Guisan, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:15 p.m. - 1:30 p.m. **K72** **Assessment of Postmortem Liver Samples Using a Validated Quick, Easy, Cheap, Effective, Rugged, and Safe (QuEChERS) Extraction for Fentanyl and Metabolites With Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Analysis**
Joseph A. Cox, MS; Colby E. Ott, MS; Joseph A. DelTondo, DO; James C. Kraner, PhD; Kristen M. Bailey, MS; Myron A. Gebhardt, MS; Luis E. Arroyo, PhD*
(FSF Emerging Forensic Scientist Award Oral Presentation)

1:30 p.m. - 1:45 p.m. **K73** **A Food and Drug Administration (FDA)-Cleared Immunoassay Screen and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS) Confirmation for Benzodiazepines in Hair**
Neil Stowe, PhD; Ryan B. Paulsen, PhD; Virginia Hill, BS; Michael I. Schaffer, PhD*

1:45 p.m. - 2:00 p.m. **K74** **Developing a Raman Microspectrophotometric Method to Quantitate Carboxyhemoglobin (COHb) in CO-Exposed Blood Samples**
Haley Melbourn, MS; Marianne E. Staretz, PhD; Heather Maldonado, MS; Thomas A. Brettell, PhD*

2:00 p.m. - 2:15 p.m. **K75** **EtG/EtS in Ethanol Negative Urine Specimens From Sexual Assault Victims**
Kristin W. Kahl, MS; Lisa J. Reidy, PhD*

2:15 p.m. - 2:30 p.m. Break

20th Annual Postmortem Pediatric Forensic Toxicology

Moderator: *Danielle C. Mata, MS*
Santa Ana, CA

Co-Moderator: *Philip M. Kemp, PhD*
Bioaeronautical Research Lab
Oklahoma City, OK

2:30 p.m. - 5:00 p.m. **K76** **Postmortem Pediatric Forensic Toxicology**
Robert A. Middleberg, PhD; Nikolas P. Lemos, PhD; Andrew M. Baker, MD*; Loralie Langman, PhD*; Chris Milroy, MD, LLB**

Thursday

Moderator: *Kenneth E. Melson, JD*
The George Washington University Law School
Kinsale, VA

Co-Moderator: *Paula C. Brumit, DDS*
University of Texas Health Science Center
Nocona, TX

8:00 p.m. - 8:20 p.m. **LW1** **The Murder of Matt Warren: Father of Former Alameda County Prosecutor, Three-Time California Governor, and Supreme Court of the United States (SCOTUS) Chief Justice Earl Warren**
Gregory E. Laskowski, MPA; Chris Livingston, MLIS**

8:20 p.m. - 8:40 p.m. **LW2** **Old Shaky: The C-124 Globemaster**
*James McGivney, DMD**

8:40 p.m. - 9:00 p.m. **LW3** **Murder of the Schoolmarm: The First School Shooting**
*Alexander Jason, BA**

9:00 p.m. - 9:20 p.m. **LW4** **To Infinity and Beyond: E.T. at the Crime Scene and the Forensic Challenges of the Current Era**
*Matteo Borrini, PhD**

9:20 p.m. - 9:40 p.m. **LW5** **Leonhard Euler's Mysterious Blindness and Fever**
John David Bullock, MD, MPH; Harrison B. Hawley, MD; Ronald E. Warwar, MD*

9:40 p.m. - 10:00 p.m. **LW6** **Forensic Photo Analysis: Who, What, When, Where, Why?**
*Colleen M. Fitzpatrick, PhD**

Wednesday

Anthropology

11:30 a.m. - 1:00 p.m. **Y1** **Exploring Variation in the Human Nasal Bones Using Elliptical Fourier Analysis (EFA)**
Leann G. Rizor, BS; Krista E. Latham, PhD; Stephen P. Nawrocki, PhD*

Criminalistics

11:30 a.m. - 1:00 p.m. **Y2** **The Efficiency of a DNA Database for Sexual Crimes by Its Victim-Offender Relationship: A Portrayal From Central Brazil**
Nigela Rodrigues Carvalho, MS; Thais C.V. Gogonzac; Mariana F. Mota; Grasielly D.O. Arão; Yanna A.R. Lima; Neide M.O. Godinho*

11:30 a.m. - 1:00 p.m. **Y3** **The Effect of Human Decomposition on Fired Bullets and the Implications for Identification**
Shelby Szymoniak; Rachel E. Smith, BS; Jane Wankmiller Harris, PhD*

11:30 a.m. - 1:00 p.m. **Y4** **Recovering Latent Fingerprints From Duct Tape After Removal From Various Surfaces Using Dry Ice**
*Vivian Hoang**

11:30 a.m. - 1:00 p.m. **Y5** **Enhanced Collection and Recovery of Cellular Material, Coupled With Direct Polymerase Chain Reaction (PCR), From Rough Surfaces for Forensic "Touch DNA"**
Joseph M. Rahm, BS; DeEtta Mills, PhD*

11:30 a.m. - 1:00 p.m. **Y6** **DNA Contamination From Handled Sharpie® Markers Used to Outline Bodily Fluids in a Forensic Laboratory**
Danielle Guckin; Lisa R. Ludvico, PhD; Pamela L. Marshall, PhD; Sara E. Bitner, MS; Betsy Wisbon, MS*

11:30 a.m. - 1:00 p.m. **Y7** **Ultraviolet (UV) Absorption Properties of Synthetic Cathinones**
Jane Berger, BS; Thomas A. Brettell, PhD; Matthew R. Wood, PhD; Marianne E. Staretz, PhD*

General

11:30 a.m. - 1:00 p.m. **Y8** **The Possibility of Personal Identification By Measurement of Scapular Volume and Bone Conformation: A Preliminary Assessment With Postmortem Full-Body Computed Tomography (CT)**
Alissa M. Shida, MS; Aoki Yayoi, BA; Kei Ikeda, MD; Naoto Tani, MA; Tomoya Ikeda, PhD, MD; Takaki Ishikawa, MD, PhD*

11:30 a.m. - 1:00 p.m. **Y9** **Testing of a Probe Capture Next-Generation Sequencing Assay for the Analysis of Nuclear Short Tandem Repeat (STR) and Single Nucleotide Polymorphism (SNP) Markers**
Tanya Tannous; Shelly Y. Shih, MS; Henry A. Erlich, PhD; Cassandra Calloway, PhD*

Toxicology

11:30 a.m. - 1:00 p.m. **Y10** **A Profile of Fatal Poisoning Cases Brought for Postmortem Examination at a Tertiary Care Institute in India—A Retrospective Study of 21 Years of Autopsy Cases**
Rajesh Kumar, MBBS, MD; Jay N. Pandit, MBBS, MD*

Thursday

Criminalistics

11:30 a.m. - 1:00 p.m. **Y11** **The Detection and Quantification of Trace Fentanyl in Mixtures With a Portable Raman Instrument and Chemometrics**
Ling Wang, PhD; Mario O. Vendrell-Dones, BS; Sevde Dogruer; Bruce R. McCord, PhD*

11:30 a.m. - 1:00 p.m. **Y12** **Visualizing and Detecting Explosives Through the Use of High-Performance Thin-Layer Chromatography (HPTLC)**
Julia Pietrangelo, BS; Marianne E. Staretz, PhD; Vincent J. Desiderio, Jr., MS; Thomas A. Brettell, PhD*

11:30 a.m. - 1:00 p.m. **Y13** **The Effects of Storage Conditions and Time on Extracted Ignitable Liquids Using Gas Chromatography/Mass Spectrometry (GC/MS)**
Sierra Strnisa; Stephanie J. Wetzel, PhD*

11:30 a.m. - 1:00 p.m. **Y14** **Testing Kinship Via Mitochondrial DNA on Colony vs. Non-Colony Cats**
Ashley Ruddy; Lisa R. Ludvico, PhD*

11:30 a.m. - 1:00 p.m. **Y15** **The Effects of the Evidence Preservation System (EPS) on the Storage of DNA Samples**
Devin J. Doyle, BS; Pamela L. Marshall, PhD; Lisa R. Ludvico, PhD*

11:30 a.m. - 1:00 p.m. **Y16** **Generating Artificially Degraded Human DNA in an Environmental Chamber**
Natalie Rivera Cardenas, BSc; Natalie Damaso, PhD; Patrick Rydzak, PhD; James M. Robertson, PhD*

General

11:30 a.m. - 1:00 p.m. **Y17** **Geospatial Analysis of Canadian Drowning Locations**
Vienna C. Lam, MA; Barbara Byers, HBA; Gail S. Anderson, PhD*

11:30 a.m. - 1:00 p.m. **Y18** **A Modern Trail of Tears: The Missing and Murdered Indigenous Women (MMIW) Crisis in the United States**
*A. Skylar Joseph, MS**

Pathology/Biology

11:30 a.m. - 1:00 p.m. **Y19** **A Longitudinal Study of the Effects of Storage Conditions on DNA Recovery From Condoms**
Claire J. Loretta; Lisa R. Ludvico, PhD; Pamela L. Marshall, PhD; Stephanie J. Wetzel, PhD*

Toxicology

11:30 a.m. - 1:00 p.m. **Y20** **The Benefits of Automation in Forensic Toxicology: A Lean Six Sigma and Cost-Analysis Approach**
Sarah J. Guertin, BS; Elizabeth A. Gardner, PhD; Hui Liu Yong, BS; Curt E. Harper, PhD*

Friday

Criminalistics

11:30 a.m.	-	1:00 p.m.	**Y21**	**Further Development of Scoring Rules for Sample Comparisons Using Automated Particle Micromorphometry of Aluminum (Al) Powders** *Kayla M. Moquin*; Cami Fuglsby, MS*; JenaMarie Baldaino, MS; Danica Ommen, PhD; Christopher P. Saunders, PhD; Jack Hietpas, PhD; JoAnn Buscaglia, PhD*
11:30 a.m.	-	1:00 p.m.	**Y22**	**Gas Chromatography With Dual Cold Electron Ionization Mass Spectrometric and Vacuum Ultraviolet Detection (GC/MS-VUV) for the Analysis of Phenylethylamine Analogs** *Jordan L. Tanen*; Ioan Marginean, PhD; Ira S. Lurie, PhD*
11:30 a.m.	-	1:00 p.m.	**Y23**	**Improved Methods for the Genetic Identification of Burned Skeletal Remains** *Kadir Dastan, PhD*; Emel Hulya Yukseloglu, PhD*
11:30 a.m.	-	1:00 p.m.	**Y24**	**The Efficiency of DNA Isolation and Profiling From Burned Human Teeth Remains** *Kadir Dastan, PhD*; Emel Hulya Yukseloglu, PhD*
11:30 a.m.	-	1:00 p.m.	**Y25**	**WITHDRAWN**

Engineering & Applied Sciences

11:30 a.m.	-	1:00 p.m.	**Y26**	**Cost-Effective Robust Authentication and Environmental Monitoring of Forensic Evidence** *Peter Gompper**

General

11:30 a.m.	-	1:00 p.m.	**Y27**	**The Evaluation of DNA Extraction Methods for Chewing Gum Samples** *Chelsea Jones*; Ashton B. Jones*; Brittania J. Bintz, MSc; Frankie L. West, PhD*
11:30 a.m.	-	1:00 p.m.	**Y28**	**Using Loop-Mediated Isothermal Amplification (LAMP) to Identify At-Risk Species in the Field** *Brooke Driscoll*; Nickolas P. Walker, BS; Jan E. Janecka, PhD*
11:30 a.m.	-	1:00 p.m.	**Y29**	**FARO® Laser Scanner as a Tool for Bloodstain Pattern Analysts: Documentation of Bloodstains Enhanced by Luminol and BlueStar®** *Tiffany Hogberg, BA**

Toxicology

11:30 a.m.	-	1:00 p.m.	**Y30**	**Methamphetamine Confirmation Analysis After Controlled Vicks® VapoInhaler™ Injection Into Oral Fluid** *Julia N. Canello*; Stephanie J. Wetzel, PhD; Frederick W. Fochtman, PhD*

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Discloses no financial relationships with commercial entities. – D2, E96, E97, H33, H34, H35, H73, H74, H129, I27
OptiTrack™, Supermicro® Systems (Discussion of Unlabeled/Investigational Use of Product/Device). – E83
Sarah J. Seashols Williams, PhD – B33
Bode Technology™, Life Technologies™, Promega®, QIAGEN® (Discussion of Commercial Products or Services).
Ismail M. Sebetan, MD, PhD –
Discloses no financial relationships with commercial entities. – E15, E47, I3
KIWICARE®, Safariland® Group, Speedball, WD-40® (Discussion of Unlabeled/Investigational Use of Product/Device). – B23
Jagmahender Singh Sehrawat, PhD –
Image J software (Discussion of Unlabeled/Investigational Use of Product/Device). – G17
Discloses no financial relationships with commercial entities. – G38
Arizona State University Dental Anthropology System (Discussion of Unlabeled/Investigational Use of Product/Device). – G43
Richard Selden, MD – A38
ANDE® Corporation (Discussion of Commercial Products or Services).
Iris L. Shields, DDS – G13
CT scan (Discussion of Unlabeled/Investigational Use of Product/Device).
Pankaj Sinha – K18
Randox® Toxicology Ltd. (Discussion of Unlabeled/Investigational Use of Product/Device).
Patricia M. Speck, DNSc –
Thermo Fisher Scientific™ (Discussion of Commercial Products or Services). – E42
Discloses no financial relationships with commercial entities. – W9
Paul Stein, PhD –
Discloses no financial relationships with commercial entities. – E15, E47, I3
KIWICARE®, Safariland® Group, Speedball, WD-40® (Discussion of Unlabeled/Investigational Use of Product/Device). – B23
Jonah W.P. Stone, BS – A29
Applied Biosystems®, Life Technologies™, QIAGEN® (Discussion of Commercial Products or Services).

V

Mark Vecellio, MFS –
Bluestar®, Fuji, Sirchie® (Discussion of Unlabeled/Investigational Use of Product/Device). – E1, E2
Discloses no financial relationships with commercial entities. – E114

W

Mark A. Walch, MArch, MPH – C21
Software product based on the Federal Bureau of Investigation's Project GRAFF (Discussion of Unlabeled/Investigational Use of Product/Device).
Devin Walker – E1
Bluestar® (Discussion of Unlabeled/Investigational Use of Product/Device).
Denise Wohlfahrt, BS –
Applied Biosystems®, Illumina®, Invitrogen™, QIAGEN®, Zymo Research (Discussion of Commercial Products or Services). – B87
Applied Biosystems®, Illumina®, Invitrogen™ (Discussion of Commercial Products or Services). – H161

PRESENTING AUTHOR FINANCIAL DISCLOSURE

The following presenting authors disclose no financial relationships with commercial entities.

A

Maurice Aalders – B92
Christoffer K. Abrahamsson, PhD – B196
Adriano Acella – K5
Alexander Acosta – B143
Donovan M. Adams, MS – A178
Dwight E. Adams, PhD – W6
Joshua L. Adams, PhD – W8
Xhemajl Ademaj, PhD – B51
Lindsey Admire, MS – B2
Natalie L. Adolphi, PhD – W24
Joe Adserias-Garriga, DDS, PhD – A5, W7
Kamar Afra, MA – A176
Huseyin Afsin, PhD – G3, G44
Amanda M. Agnew, PhD – A122, W18
Timothy J. Ainger, PhD – E35, W25
Jacqueline A. Aitkenhead-Peterson, PhD – A95
Shahnaz Akhtar, MPhil – B74
Cliff Akiyama, MPH, MA – E70
Anuradha G. Akmeemana, PhD – B126
Ivo Alberink, PhD – W19
Abigail L. Alexander, MD – H110
Bridget F.B. Algee-Hewitt, PhD – A174
Amina Ali, MD – I35
Brent M. Allred, PhD – B161, E80
Ángela Almela, PhD – D23
Alberto Alongi – B71
Sakher J. AlQahtani, PhD – BS1, G19, G28, G31
Shada Alsalamah, PhD – C30, G19
Salem Altalie, FACLM – G40
Alberto Amadasi, MD – H16
Maria Eduarda A. Amaral – F1
Francesco Amico, MD – H17
Saskia Ammer, MSc – A115
Elaine R. Amoresano, MD – H150
Bruce E. Anderson, PhD - W11
Gail S. Anderson, PhD – H158
Robert D. Anderson, MS – D39
Luisa Andrello, MD – H112
Sally E. Andrews, MS – G36
Zachary B. Andrews – B73
Janna M. Andronowski, PhD – A59, K14
Miriam Angel, MS – J7
Carmelinda Angrisani, MD – A3
George D. Annas, MD – ES1, I29
Sandra Antoniak, MD – F7
Vanessa Antoun, JD – S1
Colin Appleford – K6
Isabella Aquila, MD. PhD – D2, E83, E96, E97, H18, H33, H34, H35, H73, H74, H129, I27
Christopher L. Ardell, BS – B18
Antonina Argo, PhD – H167
Kerianne Armelli, MS – A69, H87
Adam C. Armstrong, MS – W8
Bonnie Armstrong, BS – W13
Natalie Armstrong Hoskowitz, PhD – I34
Luis E. Arroyo, PhD – B123, K41
Kenneth W. Aschheim, DDS – G19, G31, W14
Muhammad Irfan Ashiq, PhD – B74
Zuhha Ashraf, MD – H166
Sevil Atasoy, PhD – J11, K44
Dana Austin, PhD – A60, A108
Jessica L. Ayala, MSFS – K32
Rabia Aydin, BS – K44

B

Kailey Babcock, BS – H128
Russell S. Babcock, JD – W20
Björn Bäckström, MD – H8
Michael M. Baden, MD – F2
Christiane I. Baigent, MSc – A143
Christine Bailey, MA – A142
Lora Bailey Van Houten, MS – B45, B135
Andrew M. Baker, MD – H99, K76
Benedetta Baldari, MD – H113
Gennaro Baldino, MD – B71, H29
Lucija Barbaric – B104
Wyatt Barie – B118
Berislav Barišic-Jaman, BS – D25
Rosario Barranco – H23, H57, H135, K12
Morgan Barrett, BS – B43
Eric J. Bartelink, PhD – A35, A115
Stephanie Basiliere, BS – K61
Steven C. Batterman, PhD – S2
Sebastiano Battiato, PhD – C14
Corey A. Bauer, JD – F31
Michael H. Baumann, PhD – W21
Brooke R. Baumgarten, MS – B155
Jocenel J. Beach, BA – B103
Melanie M. Beasley, PhD – A110
Kristine G. Beaty, PhD – B76
Kathy Bell – E21
Michelle L. Bell, BA –B88, L1
Pasquale Beltempo, MD – E18, E120, I31
Jennifer Bennett, JD – F5
Haley Berkland, BA – K33
Giuseppe Bertozzi, MD – E10, E11, E12, E13, E40, E41, E87, H2, H136, H137, H138
Dean J. Bertram, PhD – W6
Benoit Bertrand, PhD – A160
Ingrid Bertsch, MA – I18
Jonathan D. Bethard, PhD – A113, A177, W25
Robert A. Bever, PhD – B106
Brittany N. Beyer, MS – S2
Zain Bhaloo, MSc – S2
Frederick R. Bieber, PhD – W20
Lucie Biehler-Gomez – A163
Cate E. Bird, PhD – A85

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Brett Bishop – W23
Sandra C. Bishop-Freeman, PhD – K57
Thomas M. Blackwell, BS – B156
Nathan Blair, BS – A73
Brooke H. Blake, MD – H148
Brittney L. Blevins, MA – A24
Michelle Boileau, PhD – B192
Diane Boland, PhD – K69
Katelyn L. Bolhofner, PhD – W22
John H. Bolte, PhD – D37, W18
Luana Bonaccurso, MD – A25, E9, H116
Omar Bonato, MD – E90, H13
Jennifer Bonetti, MS – B185, W21
Alessandro Bonsignore, MD, PhD – H19, H57, H135, K12
Alice B. Boone, BS – B70
Matteo Borrini, PhD – B3, LW4
Sean Bortz, BS – K13
David R. Bosch, PhD – D9, D26, D33
Caterina Bosco, MD – E9, H116
Ingrid Bosman, PhD – K66
April Bowen, BS – D13
Donna C. Boyd, PhD – A45
Joe Bozenko, MSc – B24, B196
Tammy Bracewell, PhD – A134
Kimberly Bradley, MS – C33
Tim Braun – W10
Charles H. Brenner, PhD – F10, F11
Alice Briones, DO – H103
Desiré Brits, PhD – A155
Amy N. Brodeur, MFS – W6
Evie K. Brooks, BS – B215
Helmut G. Brosz, BASc – D30, D32
Ryanne Brown, MSFS – K53
Katelyn E. Bruno, MFS – W23
Erick P. Bryant, MFS – E114
Rebecca E. Bucht, PhD – B36
Kristi Bugajski, PhD – E109
Valentina Bugelli, MD – H76
John David Bullock, MD, MPH – LW5
Michael Buresh, JD – F29, F30
JoAnn Buscaglia, PhD – B164
Daniel C. Butler, MD – H120
John M. Butler, PhD – F9
Kimberly Butler-Derose, MFS – E15
Sultan M. Büyüker – K44
Patrick Buzzini, PhD – S2
Jason H. Byrd, PhD – W14

C

Mikayla Caldwell, MS – K22
Michael Callahan, BSME – D41
Jessica L. Campbell, PhD – A27
Jorien Campbell, MD – L2
Carlo P. Campobasso, MD, PhD – H76, W5
Jesus A. Campos, MS – E82
Mariel Candelario Gorbea, MSFS – A107
Julia N. Canello - Y30
Yijian Cao, BSc – B5
Briana A. Capistran, BA – B180
Cezar Capitaneanu, DMD, PhD – G10
Fiorella Caputo, MD – H23, H135
Felice F. Carabellese, MD – I15, I16, W5
Rachael M. Carew, MSc – A58, E19, W24
Julie A. Carnes – C4
Amy Y. Carney, PhD – W9
Douglas J. Carpenter, MS – W3
Morgan N. Carpenter, BS – B55
Alicia L. Carriquiry, PhD – B173, W2
Helen R. Carter, BS – H132
Joye M. Carter, MD – S1
Melinda L. Carter, MD, PhD – A170
Nigela Rodrigues Carvalho, MS - Y2
Daniel Castellanos, MA – A113
Reilly Caten, BS – E103
William D. Cawley, MA – A137
Giovanni Cecchetto, MD, PhD – A48
Jennifer Celentano – A34
Greta Cena, MD – A25, C15
Michelle Cerreta, PhD – B200
Gary A. Chaimowitz, MD – I7
Megan I. Chambers, BS – B130
Christophe Champod, PhD - B170
Chi Hin Marco Chan – K40
Ayako Chan-Hosokawa, MS – K46
Christopher P. Chany, MS – B16, B102
Irfan Chaudhry, MD – H101
Mohit Chauhan, MBBS, MD, DHM – C24
Qiang Chen, PhD – D10
Kevin Cheng – H95
Lesley A. Chesson, MS – A109
Kaitlyn Chetney – B168
Colleen M. Cheverko, PhD – A42
Joseph Chien, DO – I12
Alberto Chighine, MD – H24
Siddharth S. Chowdhury, MS – C35
Alexander F. Christensen, PhD – A169
Angi M. Christensen, PhD – A118
Brenda B. Christy, MS – B178
Elaine Y. Chu, MA – A30
Sarah Chu, MS – F14
Hee-Sun Chung, PhD – K21
Andrea Cioffi – E91
Luigi Cipolloni, MD, PhD – E12
Laura E. Cirillo, MA – A128
Gary Ciuffetelli, MD – L2
Michelle S. Clark, MS – E29
Randall Clark, PhD - W26
Hannah Clause, BS – B201
Michael Clay, DMD – G42
Laurel Clegg, MSc – A80, A83
Samantha W. Coberly, MA – A74
Katherine Cochrane, MD – H4
Giuseppe Cocimano, MD – H62
Sarah R. Coffman – E111
Mary E. Cole, PhD – A165

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Stephanie J. Cole, MS – A9
Cheyenne Collins, BS – A138
Hailey Collord-Stalder, BA – A73
Derek Congram, PhD – A83
Elizabeth C. Conner, MPH, CHES – K47
Melissa A. Connor, PhD – S2
Elena Coppo, MD – G16
Mauro Coppone, MD – E53, E90
Fabrizio Cordasco, MD – D2, E83, E96, H18, H33, H74, I27
Allyson Cordoni, MSN – E21
Jered B. Cornelison, PhD – H143
Heitor Correa – H20
Louise K. Corron, PhD – W12
Gustavo Costa, MS – B65
Sulekha Coticone, PhD – B45, B135
Jaime Coulter, JD – I20
Joseph A. Cox, MS – K39, K72
Crystal L. Crabb, BS – A147
Alba E. Craig, BA – A13
Amy M. Crawford, MS – J20
Danielle M. Crimmins, MS – E73, E100
Rosa L. Cromartie, BS – B64
Sarah N. Crosby, MS – W8
Andrew N. Crouse, BA – C9
Christian Crowder, PhD – S2
Courtney Cruse, BS – B97
Breanna M. Cuchara, MFS – E32
Elisabeth Cuerrier-Richer, MSc – A18
Lloyd Cunningham – W23
James M. Curran, PhD – B100
Phillip M. Curran, MFS – BS6
Serena Maria Curti, MD – E18, E120, I31

D

Gretchen R. Dabbs, PhD – A135
Ian Dadour, PhD – H131
Corinne D'Anjou, DMD – G34
Giuliana D'anna – K24
Mariam Dar, PhD – D21
Siddhartha Das, MD – H156
Sandra G.G. da Silva – G39
Kadir Dastan, PhD – B147, B148, Y23, Y24
J. Tyler Davidson, MS – B188
Gregory G. Davis, MD – W1
Josep De Alcaraz-Fossoul, PhD – B160, W7
Luigi De Aloe, MD – H33
Lauren A. Decker – H169
Summer J. Decker, PhD – W24
Dean De Crisce, MD – I20
Gianni De Giorgio – D14, H63
Jade S. De La Paz, MS – A7
Armando B. Dela Rosa, Jr., MA – W8
Veronique F. Delattre, DDS – G25
Zoe Del Fante, MD – H14
Dana Delger, JD – F15
Massimiliano dell'Aquila, MD – E89
Randi M. Depp, MS – A141
Sharon M. Derrick, PhD – A168
Vincent J. Desiderio, Jr., MS – S2
Betty Layne DesPortes, JD, MS – W22
Sylvain Desranleau, DMD – G18
Josh Dettman, PhD – B197
Maria Corazon A. De Ungria, PhD – E86
Annemieke de Vries, PhD – W19
Raven DeWeese, BS – E22
John Dewey, BS – H60
Abdulrhman M. Dhabbah, PhD – K16
Apoorva R. Dharmadhikari – H36
Peter J. Diaczuk, PhD – B99
Gabriel C. Dias – G12
Taylor M. Dickerson III, MSFS – W14
Gregory M. Dickinson, MD – H43
Gabrielle E. DiEmma, BS – H71
Khalifa Dieng, DDS, PhD – G1
Elizabeth A. DiGangi, PhD – A52
Leah M. Dignan, BS – B80
Aldo Di Nunzio – B3, K19
Ciro Di Nunzio, PhD – B3, K19
Michele Di Nunzio – B3, K19
Stephanie Diu, BA – H31
Giancarlo Di Vella, MD, PhD – A25, C15, E9, G16, H116, H117, H177, W5
Michael J. Dolan, Jr., MS – B137
Stephanie Domitrovich, JD, PhD – F25, S1, W19
Laura Donato – C2, H179
Shengzhong Dong – H67
Katie C. Donohue – H5, H56
Mercedes Doretti, MA – A98
Robert B.J. Dorion, DDS – G46, G48
J.C.U. Downs, MD – W13
Devin J. Doyle, BS - Y15
Derek M. Draft, DDS – G34
Alessandra Draicchio, PsyD – I30
Brooke Driscoll - Y28
Martina Drommi – K12
Melanie Dumas, DMD – G23
Anielle Duncan, BA – E16
John W. Dunlap, MSFS, MSCJ – W8
Thomas B. Duong, BS – H10
Melissa A. Dupée, MSFS – L1
Gregory Dutton, PhD – S1

E

Hillary L. Eaton, PhD – B84
Lars C. Ebert, PhD – H168, W24
Lauren Edelman, MD – BS5
Heather J.H. Edgar, PhD – A172
Christen C. Eggers, MS – G21
Miranda M. Ehlers, BS – A60
Mallory R. Einfalt, BS – B54
Jonathan Eisenstat, MD – H86
Rachell A. Ekroos, PhD – W9
Heidi Eldridge, MS – B170
Sarah Ellingham, PhD – W7

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Amie Ely, JD – A103
Matthew V. Emery, PhD – A130
Sandra R. Enslow, BA – E3
Isil T. Erdogan, MS – H28
Stefano Errico – K12
Massimiliano Esposito, MD – D36, H62
Elizabeth A. Evangelou, MA – A52, A53

F

Matteo Fabbri, MS – E90, H70
Paolo Fais, PhD – H11
Ambarin Faizi, DO – L2
Anthony B. Falsetti, PhD – W14
Armin A. Farid, DMD – G8
Amanda L. Farrell, PhD – E35, W25
Sara Fatula, BS – A157
Diana K. Faugno, MSN – W9
Marc Feaster, BS – K57
William Feeney, BS – B101
Carla D. Feliciano – J3
Alan R. Felthous, MD – W5
Khalid S. Feras, MPhil – B74
Lyndsie N. Ferrara, PhD – E111
Michela Ferrara, MD – E14, E37, E38, E39, E87, H137
Morgan J. Ferrell, BA – A148
Alessandro M. Ferrero, MSc – D17
Christopher Fields, MD – I28
Casey File, MS – A55
Oran Finegan, MSc – A81
Marissa J. Finkelstein, MS – K17
Janet E. Finlayson, MA – A17
Sheree J. Finley, PhD – B112, H163
Amanda Fitch, MS – E72
Colleen M. Fitzpatrick, PhD – LW6
Leslie E. Fitzpatrick, PhD – W7
Taylor M. Flaherty, BS – A49
Meghan Fogerty, MS – B183
Zoe Foglia – E79
Rebecca Folkerth, MD – H175, W15
Jessica R. Ford – B167
Jonathan M. Ford, PhD – W24
Alexander S. Forrest, FFOMP – W7
Leann Forte, BS – B124
Géromine Fournier, DDS – G45
Sherry C. Fox, PhD – A79
Manish Fozdar, MD – I20, I23
Darren Franck, MSME – D5
Filippo Franconi, MD – I14, I17
Kelvin J. Frank, Jr., BS – B140
Chantrell Frazier, BS – B119
Corina Freitas, MD – ES1, I29
Nicholas Frey, BS – D44
Jennifer Friedman, JD – F13
Rob Friedman, JD – I23
Sadie R. Friend – A56
Francesca Frigiolini – H135
Kristina Fritz, BS – B181
Will Frizzell, MD – I12
Cami Fuglsby, MS – J24, Y21
Tatsuya Fukuoka, ME – D12
Laura C. Fulginiti, PhD – W22

G

Allison Gaines – H111
Celia M. Gallo, MFS – BS6
Alison Galloway, PhD – A129
Matthew J. Gamette, MS – A103
Luke Garcia – K63
Taylor L. Gardner, BFS – G47
Luciano Garofano, PhD – W17
Jeremiah Garrido, BS – B88
Heather M. Garvin, PhD – A10, W12
Shelby Garza, MA – A154
Michael B. Gatch, PhD – W21
Hunter N. Gault – E52
Cynthia Gavin, PhD – W14
Steven Geniuk, MS – W8
Patrick H. Geoghegan, PhD – D6
Camilla George, BDS – G6
Rebecca L. George, MA – A127
Zeno J. Geradts, PhD – C17, C18, W16, W19, S2
Katherine B. Gettings, PhD – B107
Sara M. Getz, PhD – A150
Mirna S. Ghemrawi, MS – B82
James R. Gill, MD – H99
Cinzia Gimelli, PsyD, PhD – W17
Kimbelry D. Gin – A36
Sara Gioia, MD – H22, H59, H90, H119
Lorenzo Gitto, MD – H102, H171, H179
Oliver Giudice, PhD – C14
Tamara Giwa – F4
Timothy P. Gocha, PhD – A39
Kanya Godde, PhD – A20
Christopher M. Goden, BS – A162
Vidia A. Gokool, BS – B179
Justin Goldstein, MA – A171
Jessica Goldthwaite, JD – F4
Amanda J. Gonzalez, MS – B10
Alice F. Gooding, PhD – A68
James F. Goodrich, FFOMP – BS1, G27
Emily D. Gottfried, PhD – I28, S2
Cheyenne M. Graham – E106
Michael A. Graham, MD – H99
Abigail J. Grande, MPH – H182
Ignazio Grattagliano, PsyD – I2
Trista Gray, BS – B20
Henry T. Greely, JD – W20
Catalin Grigoras, PhD – W16
Peter Gompper - Y26
Jia Jun Guan, MD – H174
Luca Guarnera, MS – C14
Giulia Gubinelli – E99, K35
Danielle Guckin - Y6
Sarah J. Guertin, BS - Y20

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Mete K. Gulmen, PhD, MD – E60, E61, H105
Susan M. Gurney, PhD – E115
Carlos A. Gutierrez, MS – E113
Ryan Gutierrez, BS – B149
Barbara Guttman, BA – C7

H

Ashley E. Haas, BS – B134
Amanda M. Haase, BS – H77
Emily A. Haase, BS – J1
Timothy Habick, PhD – D19
Shokouh Haddadi, PhD – B128
Maryah E.M. Haertel – B165
Sarah V. Hainsworth, PhD – D7
Anthony M. Hallett – F31
Amir J. Hamuod – H114
Angela L. Harden, MA – A121, W18
Brett E. Harding, MBA – E25
Nina Harnarine, BSc – J6
Danielle Harrell, DO – H39
Michael Harrell, MD – H118
William T. Harrison, MD – H42
Kristen Hartnett-McCann, PhD – W22
Anita Roman Hasert, BS – E30
Lauren Havrilla, DO – H145
Leigh Hayes, BS – E17
Vivienne G. Heaton, PhD – H126
Joseph T. Hefner, PhD – A175
Casey A. Hegel, BA – A41
Brady Held, BFA – D41
Kari Helgeson, MA – A21
Ashley N. Henderson, BS – B49
David S. Hernandez Funes – E74
Krista A. Herrera, BS – B46
Curt Hewitt – H94
Terry-Dawn Hewitt, LLM – F16
R. Austin Hicklin, PhD – B164
Shante Hill – H153
Dennis C. Hilliard, MS – F20
Amanda Ho, MD – H21
Vivian Hoang - Y4
Claire M. Hodson, PhD – A26
Heike Hofmann, PhD – W2
Lisa M. Hofstad, DMD – G15
Tiffany Hogberg, BA - Y29
Katharina M. Höland, MS – A140
Debra Holbrook, MSN – W9
Frances E. Hollingbury, MBChB – W24
Daniel M. Honig, PE – D11
Corey A. Hornersmith, BS – H140
Rachel M. Houston, PhD – B35
Kirstin E. Howell, MD – H84
Audrey V. Hoyle, BS – B14
Xiao Hu – D10
Marilyn A. Huestis, PhD – W21
Lurena A. Huffman, BS – W25
Bethany Hughes – L2
Cris E. Hughes, PhD – A71
Nicolas R. Hughes, JD – F27
Ted R. Hunt, JD - W20
Cheryl D. Hunter – S2
Michael J. Hunter, JD – W1
Jessica Hvozdovich, MS – K25

I

Francesca Iannaccone – K42
Fabio Innocenzi – H117
Mariyam I. Isa, MA – A1, A119
Carolyn V. Isaac, PhD – A120

J

David Jackson, MSc – B157
David S. Jackson, BS – E20
Glen P. Jackson, PhD – B159
Linda C. Jackson, MS – W4
Yu Ryang Jang, PhD – A67
Kristin Jarman, PhD – B111
Hannah C. Jarvis, MRCS – H43
Alexander Jason, BA – B89, LW3
Gulnaz T. Javan, PhD – H100, H124, H162
Jayakumar Jayaraman, PhD – G32
Kavita M. Jeerage, PhD – B53
Jasmine M. Jefferson, MS – E112
Yangseung Jeong, PhD – A4
Sherry Jilinski, MD – H103
Alexis P. Johnson, BA – B26
Bryan Johnson, MSFS – W14
Robert Johnston, DO – H1
Ashton B. Jones - Y27
Chelsea Jones - Y27
Christine Jones, PhD – A134
Kaitlin Jones, BS – B182
Sydney Jones, BS – B194
Michelle Jordan – B216
A. Skylar Joseph, MS - Y18
Jacqueline Joseph – J9
Lily Josephs, BS – H64
Chelsey A. Juarez, PhD – A61, A129

K

Sherri L. Kacinko, PhD – K54
Kristin W. Kahl, MS – K75
Kelly R. Kamnikar, MA – A28
Tatsuyuki Kanamori – B21
Tanuj Kanchan, MD – G41
Kerri Kane, MA – I34
Yun-Seok Kang, PhD – D38, W18
Molly A. Kaplan, BA – A100, A153
Naomi Kaplan-Damary, PhD – B174
Masaaki Kasamatsu – B56
Sierra Kaszubinski, BS – H157
Sara H. Katsanis, MS – A90

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Daniel E. Katz, MFS – W25
Lindsay M. Kaufman, BS – B202
Amanpreet Kaur, MSc – J27
Tej Kaur, MSc – A65
Antoinette E. Kavanaugh, PHD – F6
C. Dirk Keene, MD, PhD – W15
Luz J. Kelley, MS – B69
Shannon Kelley, PhD – I34
Brian Kemp – B75
Dori E. Kenessey, BA – A23
Haeli Kennedy – A136
Roderick T. Kennedy, JD – W20
Ruthie O. Kennedy – B203
Michael W. Kenyhercz, PhD – A123
Alper Keten – E57, E58, I26
Farnaz Khalafi, MD – H85
Javaid Khan – J5
Reema Khan, MD – H146, H154
Marwan Khoury – E84, H68
Dong-Ho Eddie Kim, BSc – A64
Eunmi Kim, PhD – K29
Jessica H. Kindell, BS – B163
Derek J. Kingsbury, MBA – W8
David E. Kintz, Jr., BS – A143
Daniel A. Kirsch, BA – H109
Alexandra R. Klales, PhD – A117, W12
Kristina-Ana Klaric, MD – H178
Megan K. Kleeschulte, MA - W11
Colleen Klein, MD – H176
Kelly L. Knight, MS – E5
Jonathan J. Koehler, PhD – B169
Omid Komari – D27
Lauren G. Koutlias, MA – A75
Ivett Kovari, PhD – E34
Ruben F. Kranenburg, MS – B211
Herolind Krasniqi – B51
Carl R. Kriigel, MA – C28, C38
Kewal Krishan, PhD – A2, B171, G14
Jeroen J.F. Kroll – W24
Robert Kronstrand, PhD – K67
Alex J. Krotulski, MS – K52, S2, W21
John L. Krstenansky, PhD – K20
Akiko Kumagi, DDS, PhD – G2
Rajesh Kumar, MBBS, MD - Y10

L

Mary T. Laamanen, MS – C7
Laura M. Labay, PhD – W10
Ericka N. L'Abbe, PhD – A6, A66
Richard R. Laing, MS – B191
Vienna C. Lam, MA - Y17
Celeste M. Lambert, BS – E64
Massimo Lancia, MD – H22, H119
Rachael Landrie – E78
Loralie Langman, PhD – K76
Patrick E. Lantz, MD – H151
Antonietta Lanzarone – E36
Fiorella Lanzillotta, MD – H65
Kristin Larish, JD – W22
Bobby Larue, Jr., PhD – B114
Gregory E. Laskowski, MPA – B98, LW1
Rusan Lateef, MSW – I35
Donatella La Tegola, PhD – I17
Tiffany R. Layne, MS – B41
Michelle Le, BS – B115
Pauline E. Leary, PhD – B186, B210
Jessica LeCroy, BS – E81
Andrea Ledic, MS – J28
Igor K. Lednev, PhD – E28
Dayong Lee, PhD – K48
Nicole D. Lee, MS – H133
Kevin M. Legg, PhD – W10
Puping Lei, MD – H49
Christina A. Leija, MS – E52
Nikolas P. Lemos, PhD – S2
Yara V. Lemos, MS – E44
Emily C. Lennert, BS – B22
John J. Lentini, BA – S1, W3
Mark M. LeVaughn, MD – H147
Andrew P. Levin, MD – E73
Naomi S. Levin, BA – A54
Andra Lewis, MS – B59
Cheri Lewis, DDS – G26
E. Thomas Lewis, MD – I28
Frederick Li, MS – K38
Li Li, PhD – B142
Ling Li, MD – H49
Rong Li – H49
Sun Yi Li, BS – B204
Aldo Liberto, MD – H45
Kamonpan Limlek, MD – K15
Li Lin – C19
Christina D. Lindquist, MS – B88
Laura L. Liptai, PhD – D34, W19
Yifan Liu – B207
Chris Livingston, MLIS – LW1
Andrew Lloyd, JD – I20
Tracy-Lynn E. Lockwood, BS – E23
Sarah Lockyer, PhD – G23
Ellen Lofaro, PhD - W11
Barry K. Logan, PhD – W1, W21
Gretchel Lomboy, MSc – C40
Gina Londino-Smolar, MS – E107, W6
Cameron M. Longo, BS – B95
Afrin Lopa, MS – A92
Dayanira Lopez, MS – A146
Claire J. Loretta - Y19
Jennifer C. Love, PhD – A106
Victoria S. Lucas, PhD – G30, G33
Elena Lucenti, MD – E51, E90
Collin Lueck – I11
Melania Lugli, PhD – I30
Ashley Lukefahr, MD – H165

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Brienne Lukes, MFS – E47
Francesco Lupariello, MD – C15, G16, H117
Paige A. Lynch, MS – A19

M

Allison M. Macri – B25
Francesca Maglietta, MD – E10, E12, E13, E14, E37, E38, E39, E40, E41, H136, H137, H138
Justin R. Maiers, MS – A89
Kaitlin Main, MA – B158
Pasquale Malandrino, MD – H83
Ellyson Maleski, BS – D34
Orazio Malfa, MD – H129
Christina A. Malone, MSFS – C13, C28, C37, C38
Rick Malone, MD – BS6
Mini Mamak, EdD – I6
Gabriele Mandarelli, MD, PhD – W5
Alice Chiara Manetti, MD – K43
Federico Manetti, MD – H80, H81
Erica Maney – H31
Wesley Maram, PhD – I20
Frank M. Marchak, PhD – E69
Steven M. Marcus, MD – W10
Emiliano G. Maresi, MD – H78
Lorenzo Marinelli – E90
Daniel Marion, Jr., PhD – E3
David Brian Marks, MS – C5
Jarrod A. Marks, MD – ES1
Vincent Marks, DM – W10
Desiree A. Marshall, MD – W15
Jamila S. Marshall Roberts, MS – B162
Daniel G. Martin, JD – W22
Britny Martlin – A47
Matthew J. Marvin, BS – F14
Danielle C. Mata, MS – K36
Kylea M. Mathison – K39
Tiffany M. Matyja – B12
Marisa C. May, BS – B13
Philip Maynard, PhD – C20
Edward Mazuchowski II, MD, PhD – W24
Caige McCabe, BS – C1
Carl R. McClary, MS – J29
Megan L. McCollum – A149
Kyle A. McCormick, PhD – A166
Mark R. McCoy, EdD – W6
Keith M. McCullen, MFS – W8
Bryan McCullough – B218
James McGivney, DMD – LW2
Declan McGuone, MD – H142
Kelsey P. McKay – E21
Heather M. McLendon – H5, H56
Georgina E. Meakin, PhD – B81
Samantha A. Mehnert – B198
Haley Melbourn, MS – K74
Niccolò D. Melloni, MD – H177
Jorge Mendoza, BS, ME – D42
M.J. Menendez, JD – W1
Korina Menking-Hoggatt, MS – B62, B100
Siniša Merkaš – E56
Vadim Mesli, MD – H127
Diana L. Messer, MS – A151, A152
Christi Meyer, BS – H139
Richard P. Meyers, MSFS – W4
Amy Michael, PhD – A1
Robert A. Middleberg, PhD – K76, W21
Samuel A. Mijal, BS – A40
Angel L. Miles, MA – BS6
Ana M. Milheiro, PhD – G9
Catherine R. Miller, MD – H92
Colleen F. Milligan, PhD – A33
Carly E. Mills, BS – B4, B5
Danny A. Milner, Jr., MD, MSc – A105
Chris Milroy, MD, LLB – K76
Jisook Min, PhD – B72
Michelle D. Miranda, PhD – B36, B60, B125
Molly Miranker, MA – A102
Natalie Mirosch – A133
Ewelina M. Mistek, MS – E55, E75
Stacey A Mitchell, DNP – W9
T.J. Mitchell, BA – BS2
Mariah E. Moe, MA – A32
Ellen Moffatt, MD – H38
Linton Mohammed, PhD – J18, W23
Amanda L.A. Mohr, MSFS – K50, W21
Fiona Moloney, BS – I35
Juliana Molosky – H3, H53
Jacob Momberger – E104
Cristina Mondello, MD – H29, H30
Angelo Montana, MD – H17, H83
Torri L. Montgomery, MD – I21
Jason Moore, MA – B115
Zama Moosvi, MDS, MS – G11
Kayla M. Moquin - Y21
Christopher Moraff, MS – W21
Sebastien Moret, PhD – B172
Matteo Moretti, MD – H9, H97, K7
Amanda A. Moses, BS – C33
Sharon K. Moses, PhD – E67
Matthew W. Motley, MD, PhD – I33
Ashraf Mozayani, PharmD, PhD – K10, K11
Diana Mullis, MD – I28
Amy Z. Mundorff, PhD - W11
Hayley K. Murphy, BS – B141
Derek Musgrove – H172
Giacomo Musile, PhD – B219
Suzzanne I. Myers – C25

N

Mohan Nair, MD – I20, I23
Sherry Nakhaeizadeh – A14
Lucia Nardelli – F8
Gabriela B. Nardoto – A111

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Farah Narmouq – B8
Christina Hayes Nash, MS – B139
Barbara L. Needell, DMD – S1
Vanessa R. Neff, MS – W8
Pierre Negri, PhD – B129
Yolanda Nerkowski, BA – G47
Briana T. New, MA – A22
Jennifer Newman, PhD – C19
Reta Newman, MA - W26
Michael S. Nirenberg, DPM – B93, E76
Vadoud Niri, PhD – B15
Yoshinori Nishiwaki – B131
Khalid Noman – D44
Martin Novak, MPA – C42, E100
Carraugh Reilly Nowak, MFS – W6
Karen M. Nunes – E88
W. Milton Nuzum III, JD – F25

O

Benjamin J. OBrien, BS – B79
Burak Oclu, MS – C8
Helen D. O'Conor, LLM – F23
Chris O'Donnell, MD – W24
Rachel H. Oefelein, MSc – F12
Lars Oesterhelweg – W24
Seoeun Oh – G37
Uzoma A. Okafor, PhD – W6
Elaine J. Oldford, BS – K68
Fabio Oldoni, PhD – B50
Antonio Oliva, MD, PhD – E66
Maureen E. Oliva, BS – B17
Angela T. Oliveira, MS – B166
Matheus S. Oliveira – C22
Martin S. Olivier, PhD – C6, J4
Blerim Olluri, PhD – B29, B51
Stephanie Olofson, MS – B206
Dilara Oner, MS – J2, J10, J21, J26
Amy M. Osborne, BS – B61
Colby E. Ott, MS – B27, K30
Scott R. Oulton, BS – B156
Oriana Ovide – B73

P

Claire J. Page – B96
Christopher S. Palenik, PhD – B214
Aikaterini Papaioannou, MS – A78
Donna M. Papsun, MS – K55, W21
Cara E. Paraska, BS – B145
Antonino Barbaro Paratore, MS – C14
Manoj Bhausaheb Parchake, MD – H32, H46
Jennifer A. Paris, BS – BS4
Chan-Seong Park, PhD – D1
Alden Parker – I19
Madeline Parker, MS – A8
Robyn Parks – H50, H152
Robert N. Parrish, JD – W13
Nicholas V. Passalacqua, PhD – A70
Monica B. Patel, DO – H144
Ryan B. Paulsen, PhD – K59
David C. Pavone, BS – B189
Sydney C. Pawsey, BS – H61
Michelle R. Peace, PhD – E116
Levi E. Peck – E52
Stephen Peltier, BS – H53
Charla Skinner Perdue, MS, MFS – E117
Cristiana M.P. Pereira, PhD – G29
Tyler J. Perkins – E52
Katelynn A. Perrault, PhD – H96
Claudia Perrone, MD – D3, H51
Caterina Petetta, MD – H177
Nicholas Petraco, MS – B28
Martha Petrovick, PhD – B1
Elizabeth Phelan, BA – I1
Angelina I. Phillips, MD – H120
Taylor Phillips – H147
Thomas W. Phinney, MS, MBA – J23
Erika Phung, BS – K58
Melissa Piasecki, MD – I1
David Pienkowski, PhD – D40
Julia Pietrangelo, BS - Y12
Joao E.S. Pinheiro, PhD, MD – H184
Deborrah C. Pinto, PhD – A55
Stefan Pittner, PhD – H25, H79
Natalia A. Platosz, MS – K71
Sharon L. Plotkin, MS – S1
Carly Ploumen, BS – B193
Daniele S. Podini, PhD – B105
Justin L. Poklis, BS – K26
Carrie Polston, BA – J12
Cristoforo Pomara, MD, PhD – E12
Francesco Pontoriero, DO – H12
Elayne J. Pope, PhD – A129
Mark D. Porco, DDS – G4
Caitlin E. Porterfield, MS – W6
Mark C. Pozzi, MS – D9, D24, D26, D33, D35
Joseph A. Prahlow, MD – H99
Samuel P. Prahlow, MPH – E26, E45
Sebastien S. Prat, MD – I9, I13
Caitlin A. Pratt – I25
Lakin Prescott – B8
DeMia P. Pressley, MS – K51
Michael H. Price, PhD – W12
Mechthild K. Prinz, PhD – B7
Noemi Procopio, PhD – H93
Meghan Prusinowski, MS – B213
Ian J. Puffenberger, MD – H108
Sam Pugh – E104
Heidi Putney, MA – E73

Q

Rhonda L. Quinn – A112

PRESENTING AUTHOR FINANCIAL DISCLOSURE

R

Roberto Raffaele, BE – E83, E96, E97, H34, H73, H74, H129
Joseph M. Rahm, BS - Y5
Christopher W. Rainwater, MS – A46
Joshua Ralls – C23
Siera Ramirez, BS – E24
Charles A. Ramsay, JD – F3
Donald J. Ramsell, JD – F21
Sala D. Randall, BS – A97
Miriam Rangel, BS – A20
Amy V. Rapkiewicz, MD – H107
Mario Rascon, MD – H40
Natalie M. Raso, MD – I10
Anna L.M. Rautman, MS – A124
Kathy Raven, MD – A36
Sophie Raymond, MD – I32
Abdul Razaq, MPhil – B74
Joseph P. Receveur, BS – H72
Sophia I. Reck, MA – A139
Paul Reedy – F28
Gowri V. Reesu – G24
Trenna M. Reeve, DMD – G23
Rebecca Reid, MSc – A96
Lisa J. Reidy, PhD – K56
Stephanie Reinders, BA – C19
Robin C. Reineke, PhD – A88
Jenise Reyes-Rodriguez, BS – C10
Meredith A. Reynolds, MD – H55
Kevin Riach, JD – F3
Deborah Richardson – E102
Douglas A. Ridolfi, MS – W6
Amber D. Riley, MS – BS1
Paige Riley – E92
Mary G. Ripple, MD – H106
Mariela Rivera, MS – E54
Natalie Rivera Cardenas, BSc - Y16
Leann G. Rizor, BS - Y1
Zackery Ray Roberson, BS – B199
Graham J. Roberts, MDS – G30
Katherine A. Roberts, PhD – F17
Brianna L. Robinson – K45
Madeline H. Robles, MS, MRes – A11, A72
Salvatore Roccuzzo, MD – E49
Sandra E. Rodriguez-Cruz, PhD – B190, B208, W4
Melinda V. Rogers, MA – A31
Melissa Rogers – B39
Maxwell O. Rollins, MD – H104
Madeline G. Roman, BS – B68
Jeri D. Ropero-Miller, PhD – W19
Valentina Rosati, MD – H22, H59, H119
Adam R. Rosenblatt, PhD – A86
Ann H. Ross, PhD – A177
Ilaria Rossetto, PhD – I4, I17, W5
Claude Roux, PhD – B36
Katie M. Rubin, PhD – A164
Ashley Ruddy - Y14
Leonid I. Rudin, PhD – W16
Teresa M. Runge, MS – A167
David Russell, MS – E98
Dennis J. Ryan, MBA – J14
Colbey Ryman – E92
Joon Yeol Ryu – A161

S

Sandra B. Sachs, PhD – B156
Kenneth J. Saczalski, PhD – D26, D33, D35
Jasmine Saeedian – H48
Pauline Saint-Martin, MD, PhD – H54
Fahad Salamh, PhD – C27
Monica Salerno, MD, PhD – E12
Erica Sales – B67
Angelo Salici – C14
Maurizio Saliva, MD – W17
Tuomas Salonen, MS – B146
Michael J. Salyards, PhD – S1, W2
Michelle R. Sanford, PhD – H160
Lisa Sansom, BS – B48
Carilyn J. Santisteban, BS – D44
Paola Santoro, MD – E95
Alessandro Santurro, MD – H141, H164
Tiffany B. Saul, PhD – A116
Katherine N. Scafide, PhD – E121
Carmen Scalise, MD – E96, H18, H74
Christopher J. Scallon, MS – W25
Noah Scarpelli – B58
Madison R. Schackmuth, BS – K60
Lauren Schagel – E101
Laura K. Scheid, BA – B117
J. Amber Scherer, PhD – E35
Michael R. Schilling, MS – B181
Lynn A. Schneeweis, MS – B153
Kaylee A. Schoepe, BS – C9
Willem A. Schreuder, PhD – D15
Sarah Schwing, BA, BS – A57
Matteo Scopetti, MD – H26
Charles Scott – L2
Karen S. Scott, PhD – W6
Veronica Scotti, LLM – F19
Jan Seaman Kelly, BA – J8, J29
Dilan Seckiner – C11
Jagmahender Singh Sehrawat, PhD - G35
Andrew C. Seidel, PhD – W22
Kathryn C. Seigfried-Spellar, PhD – C35
Yoko Seki, MA – J25
Alexandra Semma Tamayo, MS – A156
Serenella Serinelli, MD – H102, H171
Francesco Sessa, MS – E11, E12, E13, E14, E39, E40, E41, E47, H2, H136, H137, H138
Amanda L. Setser, MS – B91
Valerie Sgheiza, MA – A126
Miranda L. Shaine, BS – B132
Nathan S. Shaller, MD – H123
Aaron M. Shapiro, PhD – B195
Nicholas Sharp, PhD – D16

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Donald E. Shelton, JD, PhD – F24, W20
Yiwen Shen – H67
Daniel J. Sheridan, PhD – E68
Chen Shi, MS – C39
Alissa M. Shida, BS – E7, E8, H82, H115, K2, K3, Y8
Vivian Shnaidman, MD – I24, I30, W17
Elisa N. Shoff, MS – K62
Francesco Sicilia, MD – D2, E96, H74
Courtney C. Siegert, MA – A101
Maria Silvestre, MD – E41
Hannah N. Simmons, BS – S2
Lora Sims – C5
Veena D. Singh, MD – A91
Edward Sisco, PhD – B205
Keryne Skead – H27
Cassie E. Skipper, MA – A12
Sarah F. Skoropa, BA – A159
Natalee Small-Davidson, BS – B120
Ariel B. Smart, BS – B30
Katelyn A. Smiles – B86
Alexander J. Smith, BA – A144
Amber J. Smith, MSFS – S2
Christina Smith, BS – K34
E. Allyn Smith, PhD – D20
Jeff M. Smith, MS – W16
Patricia C. Smith, MSL – E65
Rachel E. Smith, BS – A145
Taylor L. Smith, BS – H134
Martha Smith-Blackmore, DVM – W19
Sean G. Snyder, BS – D41
Angela Soler, PhD – A87
Tessa Somogyi, MA – A52, A53
Liguo Song, PhD – B11
Miriam E. Soto Martinez, PhD – A43
Sankoung Soumboundou – G1
Emily Spack, BS – B150
Lorenzo Spagnolo, MD – E37, E38, E87, H138
Micayla C. Spiros, MS – A15
Kate Spradley, PhD – A84, A173
Jessica L. Sprague, MS – K37
Supawon Srettabunjong, MD – H180
Haley M. St. John, BS – E43
Hailee St. Louis, BS – E105
Joseph Stein – B63
Madyson R. Stephenson – A16
Jack Stover – H130
Neil Stowe, PhD – K73
Frederick Strathmann, PhD – K28
Alyssa Straub, BA – E17
Sierra Strnisa - Y13
Ellen M.F. Strömmer, MPH – H170
Taylor Strunsee, MS – E63
Kyra E. Stull, PhD – A125, A39, W12
Anna Stuteville, BS – B31
Xinyi Sui, MS – K1
Christopher L. Suiter, PhD – B144
Andriana Surleva – B29
Jessica Surratt – B116
Lerah Sutton, PhD – E110
Cassandra A. Swart, MS – K22
Shelby Szymoniak - Y3

T

Ariel V. Tabachnik, BS – W17
Milazim Tahirukaj – B29, B51
Edmund D. Tamburini, MFS – W8
Kyle C. Tanaka, DDS – G5
Tobin A. Tanaka, BS – J15, J18, J22, S1
Jordan L. Tanen - Y22
Tanya Tannous - Y9
Rikki A. Tasso-Thompson – E52
Lois S. Taylor, MS – H98
Natalie E. Taylor, MD, MS – H41
Denice M. Teem, BS – K31
Christina M. Tengelin, MS – H155
MariaTeresa A. Tersigni-Tarrant, PhD – A108
Warren D. Tewes, DDS – G7
Michael Thali, MD – H168, W24
Kathleen S. Thimsen, DNP – W9
Orianna Thomas, BS – K27
Santana A.L. Thomas, PhD – B212
Katrina M. Thompson, MD – H44
Robert M. Thompson, MFS – F9, S1
Sidney Thompson, BA – B117
Isis Thornton – H69
Viktoriya Tikhonova – E52
Andreas Tillmar, PhD – W11
Miranda R. Tilton, MS – C26
Nicholas B. Tiscione, MS – K8
Melissa E. Toeller-DeSimone, BS – H52
Luca Tomassini – E94
Michelle N. Torres, BS – B176
Rachel Touroo, DVM – E71
Giuseppe Troccoli, MD – I22
Silvia Trotta – W5
Joseph Truppi, BS – H125
Chunyan Tu – H67
Alyssa N. Tuccinardi – H75
Hugh H. Tuller, MA – A77
Nilesh Keshav Tumram, MD – H47
Tiffiny A. Tung, PhD – A114
Sara Turco, MD – D45, E50, E59
Stephen Turner – H66
Shashank Tyagi, MD – H37

U

Douglas H. Ubelaker, PhD – S2, W7
Momoko Ueda, MA – A62
Ashley I. Unsinn – E52
Casey Upfold, BA – I5, I8
Samantha Upton, BA – E16
Petra Urbanová, PhD – G22

PRESENTING AUTHOR FINANCIAL DISCLOSURE

Aaron Urbas, PhD – W21
Paul Uribe, MD – W10
Tugba Ünsal, PhD – H28

V

Julie L. Valentine, PhD – E31, E101, E102, E103, E104
Rachel Valerio – C16
Fabrizio Vanaria, MD – H17
Arian C. Van Asten, PhD – W19
Gerard J.Q. van der Peijl, PhD – B57, B90, B94
Oluseyi A. Vanderpuye, PhD – B122
Courtney H. Vander Pyl, MS – B133
Wesley Vandiver, BA – D43
Rick R. Van Rijn, MD, PhD – E119, H7, W24
Shaiju Vareed, PhD – K4
Dirk Vastrick, BA – S2
Thomas W. Vastrick, BS – J13, J18, J19, S2
Elijah A. Vela – C3
Megan F. Veltri, BS – A147
Mario O. Vendrell-Dones, BS – B19
Francesco Ventura, MD – H23, H57, H135, K12
Elvira Ventura Spagnolo, MD – B71, H29
Emeline Verna – A158
Svante Vikingsson, PhD – K70
Ariel C. Viramontes, MD – E32
Caitlin C.M. Vogelsberg, PhD – A99
Gianpietro Volonnino – E93
Laura Volpini, PhD – I22

W

Ruth Waddell Smith, PhD – B159
Sarah Wagner – A82
Melanie Walchek, MFS – I3
Robert C. Walcott, DDS – G20
Gregory S. Wales, MS – C31, W16
Stewart Walker, PhD – B184, E118
Susan Walsh, PhD – W11
Brittany S. Walter, PhD – A51
Samantha Orans Wandzek, MS – B152
John Z. Wang, PhD – E62
Ling Wang, PhD - Y11
Jane Wankmiller, PhD – H89
Parris Ward, JD – D26, E27
Margaret Warner, PhD – H149
Jenna M.S. Watson, MA – A50
Steven B. Watson, BA – C4
Erin Weaver, BS – B14
Victor W. Weedn, MD, JD – F31, W14
Katherine E. Weisensee, PhD – A93
Kurt D. Weiss, MS – BS3, D24
Caitlyn Wensel, BS – B175
Frankie L. West, PhD – A131
Kelsa L. West, MS – K64
Shawn K. West, MSFS – W4
Joseph Levi White, MS – C13, C36, W6
Thomas R. White, BS – B102
Ray Wickenheiser, DPS – A107
Jason M. Wiersema, PhD – A44, W14
Matthew C. Wietbrock, BS – E33
Leah Wilk – H15
Amanda K. Will, BS – K23
Anna Williams, PhD – A94
David A. Williams, DDS – W9
John A. Williams, PhD – E108, W14
Joyce P. Williams, DNP – W9
Steven J. Williams, BS – K8
T.L. Williams, MFS – BS6
Shannan Williams-Mitchem, MA – E85
Sheila Willis, PhD – B36, S1, W19
Catherine G. Wilson, BS – H6
Justin L. Wilson, BS – E6
Agnes D. Winokur, MS - W26
Carl E. Wolf II, PhD – B209
James D. Wood, DDS – A37
Robert E. Wood, DDS, PhD – G47
Sarah Wright – B77

X

Baiyang Xu, MD – H58

Y

Aylin Yalçin Saribey, PhD – E48
Nicole A. Yarid, MD – W15
Kaan Yilancioglu, PhD – K44
Hatice Yilmaz, BS – F26
An-Di Yim, MA – A63
Rebecca A. Yoda, MD – W15
Leena Yoon, BS – B121
Beatrice Yorker, JD – W10
Christopher Young, JD – W1
Dongfang Yu, MD, PhD – H173

Z

Andrea Zaferes, BA – E21, W19
Sara C. Zapico, PhD – A5, W7
Ryan G. Zdenek – B217
Lauren Zephro, PhD – A37
Mengliang Zhang, PhD – B52
Shuangteng Zhang, PhD – C23
Xiang Zhang, MD – H49
Lawrence Ziegler, PhD – B42
James Zjalic, MSc – C12
Caroline Znachko, MA – A76

KEY WORD INDEX

KEY WORD INDEX

B

C

KEY WORD INDEX

D

E

F

KEY WORD INDEX

G

H

KEY WORD INDEX

M

N

O

P

KEY WORD INDEX

Q

R

S

T

U

V

W

X

Y

PRESENTING AUTHOR INDEX

The presenting author index can provide a quick reference to find when and in what section presenting authors are scheduled to present at the 2020 Annual Scientific Meeting. 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	J	Questioned Documents
B	Criminalistics	K	Toxicology
C	Digital & Multimedia Sciences	LW	Last Word Society
D	Engineering & Applied Sciences	BS	Breakfast Seminar
E	General	ES	Evening Session
F	Jurisprudence	L	Luncheon
G	Odontology	S	Special Session
H	Pathology/Biology	W	Workshop
I	Psychiatry & Behavioral Science	Y	Young Forensic Scientists Forum

PRESENTING AUTHOR INDEX

C

D

PRESENTING AUTHOR INDEX

E

F

G

H

I

J

K

PRESENTING AUTHOR INDEX

PRESENTING AUTHOR INDEX

S

T

PRESENTING AUTHOR INDEX

NOTES

NOTES

NOTES

NOTES

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