



**May 7-10, 2019  
Morgantown Marriott at  
Waterfront Place  
Morgantown, WV**





# Acknowledgements

## MAAFS Meeting Planning Committee

Lori Seman, <i>Chair</i>	Virginia Department of Forensic Science
Allison Laneve, <i>Co-Chair</i>	RJ Lee Group, Inc
Robin Bowen, <i>Site Coordinator</i>	West Virginia University
Cassandra Padula Burke, <i>Co-Site Coordinator</i>	Baltimore County Police Department
Stephanie Hrico, <i>Vendor Coordinator</i>	RJ Lee Group, Inc
Keena Heise, <i>Co-Vendor Coordinator</i>	Virginia Department of Forensic Science
Ashley Rush, <i>Communications</i>	Delaware Division of Forensic Science
Ruth C. Damaso Neely, <i>Biology Chair</i>	Virginia Department of Forensic Science
Catherine Savage, <i>Criminalistics Chair</i>	Maryland State Police
Rachel Clay, <i>QD Chair</i>	Federal Bureau of Investigation

## MAAFS Executive Board

Diane Lawder, <i>President</i>	Maryland State Police
Robyn Quinn, <i>President-Elect</i>	ND Office of Attorney General - Crime Laboratory Division
Eileen Briley, <i>Secretary</i>	Virginia Department of Forensic Science
Susan Blankenship, <i>Treasurer</i>	University of Maryland University College
Ashley Rush, <i>Communications</i>	Delaware Division of Forensic Science
Ruth C. Damaso Neely, <i>Biology Chair</i>	Virginia Department of Forensic Science
Catherine Savage, <i>Criminalistics Chair</i>	Maryland State Police
Rachel Clay, <i>QD Chair</i>	Federal Bureau of Investigation

### Go Green!


Meeting evaluations will be sent via email after the conclusion of the meeting. Please take 5 minutes to complete the survey when you receive it. This valuable information helps us to plan for future years and gives you the opportunity to help plan future meetings!

### Recycle Badges

MAAFS is committed to Eco-Friendly practices. Please help us by recycling your Badge Holders for use at future meetings.



# Agenda

<b>MONDAY, MAY 6, 2019</b>		
4:00pm – 6:00pm	REGISTRATION	Salon D Foyer
<b>TUESDAY, MAY 7, 2019</b>		
7:00am – 5:00pm	REGISTRATION	Salon D Foyer
7:00am – 8:00am	BREAKFAST	Foyer F-H
8:00am – 12:00pm	<b>WORKSHOPS</b>	
	W1: Forensic Genealogy: A Powerful Solution	Warf A/B
	W4: Ethics in Forensic Science	Salon C
	W6: Navigating Your Way Through the Challenging NPS Landscape [Cayman Chemical Company]	Salon B
	W11: Examining Writing on Unusual Surfaces	WVU Crime Scene House (Meet at Registration at 7:40am)
9:30am – 11:00am	CONTINUOUS COFFEE BREAK	Foyer F-H
12:00pm – 1:00pm	LUNCH (Ticket Required*)	Foyer F-H
1:00pm – 5:00pm	<b>WORKSHOPS CONTINUED</b>	
	W1: Forensic Genealogy: A Powerful Solution	Warf A/B
	W7: Fighting Fentalogues, Seeing Syn Canns, and a Little Bit of Uncertainty	Salon B/C
	W12: Examination of Torn/Cut Edges	WVU Oglebay Hall
2:30pm – 4:00pm	CONTINUOUS COFFEE BREAK  <b>SHIMADZU</b>	Foyer F-H
5:00pm – 7:00pm	BOARD MEETING	Waterfront Room

\*A reminder for lunch on Workshop Days (Tuesday and Wednesday).




Lunch is only included for attendees who will be participating in a full day of workshops. If you are registered for two half day workshops on the same day or one full day workshop, you should have received a meal ticket in your badge. If you feel you should have meal tickets but do not, please stop by the registration desk.

Boxed lunches will be delivered to attendees at the off-site workshops.



# Agenda

## WEDNESDAY, MAY 8, 2019

7:00am – 5:00pm	REGISTRATION	Salon D Foyer
7:00am – 8:00am	BREAKFAST	Foyer F-H
7:30am – 12:00pm	VENDOR AREA SET-UP	Salon E/F/G/H
8:00am – 12:00pm	<b>WORKSHOPS</b>	
	W2: Advanced Topics in DNA: Mitochondrial DNA from Sanger Sequencing to High Throughput Sequencing and Analysis [Softgenetics, LLC]	Salon C
	W5: Stress, Trauma and the Forensic Workforce: Taking Steps to Recognize and Address the Issues	Warf A/B
	W8: Analysis of Cannabinoid Potency and Pesticide Residues in Cannabis Flower Regulated by California State using HPLC and LC-MS/MS: Practical Considerations [Perkin Elmer]	Salon B
	W13: How Chemical Examinations of Inks and Paper Can Corroborate and Supplement Forensic Document Examinations	Waterfront
9:30am – 11:00am	CONTINUOUS COFFEE BREAK 	Foyer F-H
12:00pm – 1:00pm	LUNCH (Ticket Required*)	Salon E/F/G/H
1:00pm – 7:00pm	EXHIBIT HALL OPEN	Salon E/F/G/H
1:00pm – 5:00pm	<b>WORKSHOPS CONTINUED</b>	
	W3: Advanced Topics in DNA Analysis: Continuous Probabilistic Genotyping [Softgenetics, LLC]	Salon C
	W10: Novel Psychoactive Substances (NPS), Structural Isomers, and Analogs	Warf A/B
	W13: How Chemical Examinations of Inks and Paper Can Corroborate and Supplement Forensic Document Examinations	Waterfront
1:00pm – 5:00pm	ABC Exam	Garden Room
2:30pm – 4:00pm	CONTINUOUS COFFEE BREAK 	Salon E/F/G/H
5:15pm – 6:30pm	MAAFS BUSINESS MEETING	Salon D
6:30pm – 8:30pm	WELCOMING COCKTAIL RECEPTION AND VENDOR APPRECIATION 	Salon E/F/G/H
8:30pm – 12:00am	HOSPITALITY SUITE	Green Room



# Agenda

## THURSDAY, MAY 9, 2019

7:00am – 5:00pm	REGISTRATION	Salon D Foyer
7:00am – 8:00am	BREAKFAST with Vendors	Salon E/F/G/H
7:00am – 3:30pm	EXHIBIT HALL OPEN	Salon E/F/G/H
8:30am – 10:20am	VENDOR SPOTLIGHT <i>Door prizes will be given out after each presentation.</i>	Salon D
9:15am – 10:45am	CONTINUOUS COFFEE BREAK 	Salon E/F/G/H
10:45am – 12:15pm	KEYNOTE SPEAKER	Salon D
12:15pm – 1:15pm	LUNCH	Salon E/F/G/H
1:15pm – 2:15pm	SCHOLARSHIP WINNER PRESENTATIONS	Salon D
2:00pm – 3:30pm	CONTINUOUS COFFEE BREAK 	Salon E/F/G/H
2:30pm – 5:15pm	<b>PAPER PRESENTATIONS</b>	
	Biology Section	Salon A/B/C
	Criminalistics Section	Salon D
	Questioned Documents Section	Warf A/B
3:30pm – 5:00pm	VENDOR AREA TEAR DOWN	Salon E/F/G/H
6:00pm – 10:00pm	DINNER PARTY 	Mountain State Brewing Co. (54 Clay Street - short walk from the hotel)

## FRIDAY, MAY 10, 2019

7:30am – 12:00pm	REGISTRATION	Salon D Foyer
7:30am – 8:30am	BREAKFAST	Foyer F-H
8:30am – 12:00pm	<b>PAPER PRESENTATIONS</b>	
	Biology Section	Salon A/B/C
	Criminalistics Section	Salon D
	Questioned Documents Section	Warf A/B
9:30am – 11:00am	CONTINUOUS COFFEE BREAK	Foyer F-H

See You in Virginia in 2020! - Don't forget to pick up your certificate(s) before leaving.





# Morgantown Marriott At Waterfront Place

**Two Waterfront Place, Morgantown, West Virginia, 26501**

**(304) 296-1700**

## Floor Key:

Registration.....Salon D Foyer  
 MAAFS Office.....Puskar Boardroom  
 Keynote/Business Meeting.....Salon D  
 Biology Session.....Salon A/B/C  
 Criminalistics Session.....Salon D  
 QD Session.....Warf A/B

Breaks & Meals (T, W AM, & F).....Foyer F-H  
 Breaks & Meals (W lunch - Th).....Salon E/F/G/H  
 Dinner Party.....Mountain State Brewing Co.  
 Hospitality Suite.....Green Room

Welcoming/Vendor Cocktail Reception.....Salon E/F/G/H  
 Vendor Spotlight.....Salon D

ABC Exam.....Mon River A/B

## Workshop Locations:

### Tuesday Workshops

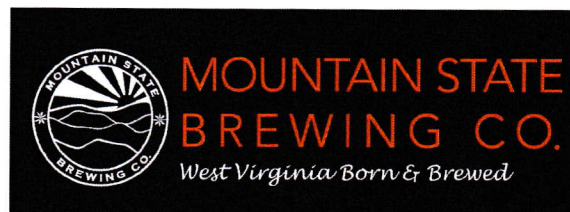
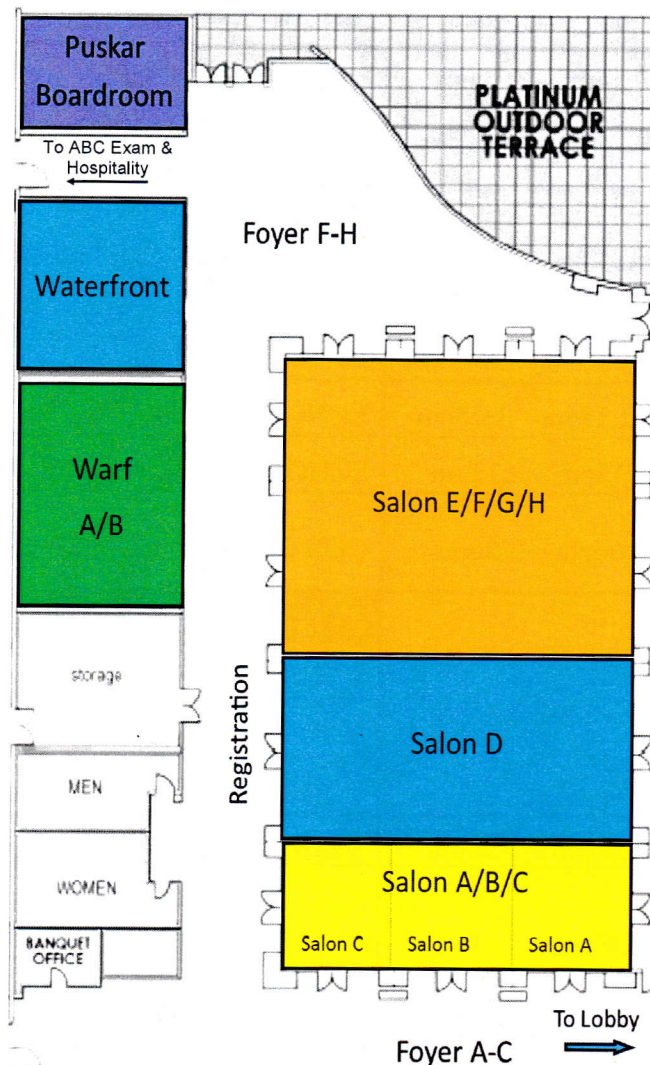
Forensic Genealogy.....Warf A/B  
 Ethics in Forensic Science.....Salon C  
 Navigating...Challenging NPS Landscape.....Salon B  
 Examining Writing on Unusual Surfaces.....Off-Site  
 Fighting Fentalogues.....Salon B/C  
 Examination of Torn/Cut Edges.....Off-Site

### Wednesday Workshops

Mitochondrial DNA & High Throughput.....Salon C  
 Stress, trauma, and the Forensic Workforce.....Warf A/B  
 Analysis of Cannabinoid Potency.....Salon B  
 Chemical Examinations of Inks and Paper.....Waterfront  
 Continuous Probabilistic Genotyping.....Salon C  
 Novel Psychoactive Substances.....Warf A/B

## Badge Color Key:

MAAFS BOARD.....Orange  
 MEETING COMMITTEE.....Purple  
 MEMBERS.....Blue  
 NON-MEMBERS.....Red  
 STUDENTS.....Yellow  
 STUDENT VOLUNTEERS.....Green  
 VENDORS.....Black



Join us for the Thursday Night Dinner Party!  
 Located at 54 Clay Street, just a 10 minute  
 walk from the hotel.



# Arbinger Institute

MAAFS 2019 Annual Meeting

Keynote Presentation

Thursday, May 9th

10:45am-12:15pm - Salon D



**BETH HANNAN**

Senior Consultant | The Arbinger Institute

## Abstract:

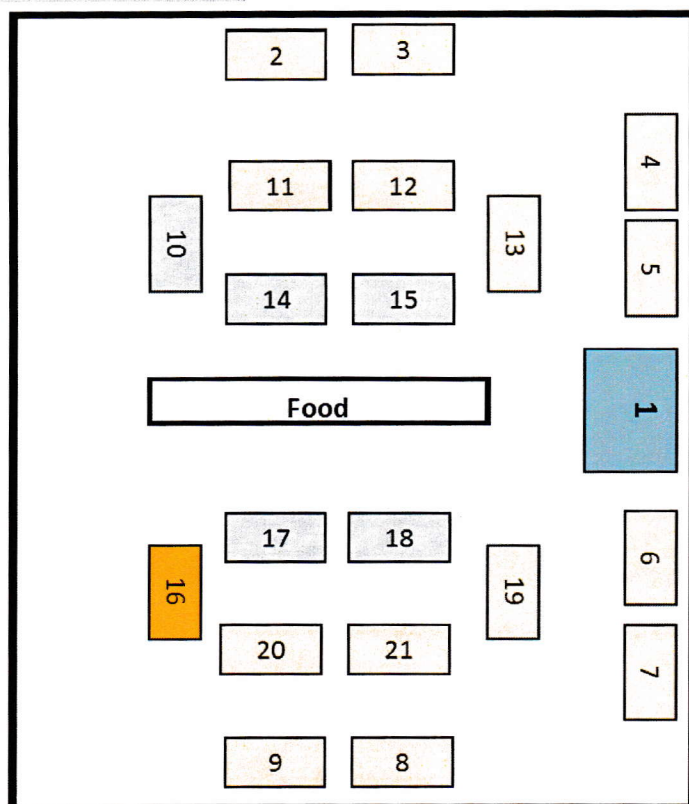
Our organizations and teams are made up of scientists who work together every day to accomplish a common goal. However, teams that can successfully respond to perpetual internal and external challenges rely on more than only outmoded behavioral solutions of the past. Rather by diagnosing and changing the underlying mindset that drives behavior, a team can become more accountable, collaborative, innovative and high performing. This is accomplished through a fundamental shift from the self-focus of an inward mindset to an impact-focus of an outward mindset. This session will offer the necessary tools to achieve this shift in mindset. With these tools, participants will learn how to enhance impact and accountability which will ultimately drive performance and results.

## Learning Objectives:

1. Learn and understand the difference between an inward mindset and an outward mindset.
2. Understand how self-deception makes us less effective and impacts our ability to work collaboratively with members, co-workers, volunteers, and partners.
3. Learn tools aimed at increasing self-awareness, and improving our mindset.



# Vendors



## Exhibit Hall Layout 2019

### Salon E/F/G/H

Wednesday, Noon-8:30pm

Thursday, 7:00am - 3:30pm

Learn more about our vendors  
during the Vendor Spotlight

Thursday, 8:30am

Salon D

Sponsorship Level	Company Name	Booth
Platinum	PerkinElmer	1
Gold	Signature Science, LLC	16
Silver	Agilent Technologies	10
	GE Healthcare	17
	JEOL USA, Inc	18
	Shimadzu Scientific Instruments, Inc.	14
	Specac	15
Bronze	Bruker Scientific LLC	5
	Cayman Chemical Company	6
	Cybergenetics	13
	Hitachi High Technologies America, Inc.	8
	IonSense Inc	4
	RJ Lee Group, Inc.	7
	SCIEX	20
	SNA International	2
	SoftGenetics	19
	Thermo Fisher Scientific	11
	Thermo Fisher Scientific	12
	UCT	3
	W. Nuhsbaum, Inc.	9
	Waters Corporation	21





## Vendors

### **PLATINUM SPONSOR**

**PerkinElmer, Inc.**

**800-762-4000**

**[www.perkinelmer.com](http://www.perkinelmer.com)**

### **GOLD SPONSOR**

**Signature Science**

**512-583-2370**

**[www.signaturescience.com](http://www.signaturescience.com)**

#### **DON'T MISS THE VENDOR SPOTLIGHT!**

Learn about your favorite vendors and more of what they have to offer! The vendors listed on the Vendor Spotlight Schedule will each have a 10 minute time slot to introduce their company, products, and research to the attendees of MAAFS 2019.

The spotlights will run back to back, so arrive on time to listen to those you are interested in.

Write your name on the raffle ticket located in your badge and turn it in when you arrive. At the close of each vendor's spotlight, a door prize will be raffled off! Must be present to win.

### **SILVER SPONSORS**

**Agilent Technologies**  
**[www.home.agilent.com](http://www.home.agilent.com)**

**GE Healthcare**  
**[www.gehealthcare.com](http://www.gehealthcare.com)**

**JEOL USA Inc.**  
**[www.jeolusa.com](http://www.jeolusa.com)**

**Shimadzu Scientific Instruments**  
**[www.ssi.shimadzu.com](http://www.ssi.shimadzu.com)**

**Specac**  
**[www.specac.co.uk](http://www.specac.co.uk)**

### **BRONZE SPONSORS**

**Bruker Scientific LLC**  
**[www.bruker.com](http://www.bruker.com)**

**Cayman Chemical Company**  
**[www.caymanchem.com](http://www.caymanchem.com)**

**Cybergenetics**  
**[www.cybgene.com](http://www.cybgene.com)**

**Hitachi High Technologies America, Inc.**  
**[www.hitachi-hta.com](http://www.hitachi-hta.com)**

**IonSense Inc**  
**[www.ionsense.com](http://www.ionsense.com)**

**RJ Lee Group**  
**[www.rjlg.com/industries/criminal-forensics](http://www.rjlg.com/industries/criminal-forensics)**

**SCIEX**  
**[www.sciex.com](http://www.sciex.com)**

**SNA International**  
**[www.sna-intl.com](http://www.sna-intl.com)**

**SoftGenetics**  
**[www.softgenetics.com](http://www.softgenetics.com)**

**Thermo Fisher Scientific**  
**[www.thermofisher.com](http://www.thermofisher.com)**

**Thermo Fisher Scientific**  
**[www.thermofisher.com](http://www.thermofisher.com)**

**UCT**  
**[www.unitedchem.com](http://www.unitedchem.com)**

**W. Nuhsbaum, Inc.**  
**[www.nuhsbaum.com](http://www.nuhsbaum.com)**

**Waters Corporation**  
**[www.waters.com](http://www.waters.com)**

#### **Non-Booth Sponsors:**

**Foster & Freeman USA**  
**[www.fosterfreeman.com](http://www.fosterfreeman.com)**

**Leeds Forensic Systems, Inc.**  
**[www.leedsforensics.com](http://www.leedsforensics.com)**

**MS NOISE**  
**[www.msnoise.com](http://www.msnoise.com)**

**National Institute of Justice**  
**[www.nij.gov](http://www.nij.gov)**





# Vendors

## MAAFS Vendor Spotlight

Thursday, May 9th — Salon D

Welcome.....8:30

Thermo Fisher Scientific .....8:40

**\*\*TBD\*\***

Cybergenetics.....8:50

**\*\*Amazon Giftcard\*\***

JEOL USA, Inc.....9:00

**\*\*TBD\*\***

Agilent Technologies.....9:10

**\*\*TBD\*\***

### ~10 MINUTE BREAK~

SCIEX.....9:30

**\*\*Travel Laptop Power Bank & External Battery Pack \*\***

Shimadzu Scientific Instrument, Inc .....9:40

**\*\*Yeti Roadie 20 Cooler\*\***

Signature Science LLC.....9:50

**\*\*Sony WH1000XM3 Wireless Bluetooth Noise Canceling Headphones\*\***

Bruker Optics.....10:00

**\*\*TBD\*\***

PerkinElmer.....10:10

**\*\*TBD\*\***

### ~25 MINUTE BREAK~

Like something you heard during the spotlight? Use this time to visit the vendors to learn more!

**\*\*Write your name on the raffle ticket located in your badge and turn it in when you arrive for the spotlight presentations. At the close of each vendor's spotlight, a door prize will be raffled off! Must be present to win.**

**Vendors supporting MAAFS can be identified by BLACK name badge holders. Please show your support for these vendors as they are essential to the success of the MAAFS annual meeting!**



# Presentations

## Scholarship Winners — Salon D

### Thursday, May 9<sup>th</sup>

- 1:15 PM**      **Developmental Validation of a Novel Method for Body Fluid Identification Using Microbial Signatures.**  
*Najai Bradley - Virginia Commonwealth University*
- 1:45 PM**      **Developmental Validation of a MicroRNA Panel for Forensic Body Fluid Identification**  
*Annabelle Campbell - Virginia Commonwealth University*
- 2:00 PM**      **Evaluation of DNA Detection Strategies for Yersinia pestis in Soil Matrices**  
*Brittany Fung - Virginia Commonwealth University*

## Biology Section — Salon A/B/C

### Thursday, May 9<sup>th</sup>

- 2:30 PM**      **Testifying About Probabilistic Genotyping Results**  
*William Allan - Cybergenetics*
- 3:00 PM**      **High-Quality Whole mtGenome Reference Data Representing Three U.S. Populations**  
*Cassandra Taylor - AFMES/AFDIL/SNA International*
- 3:15 PM**      **Revisiting the Identity of JB-55, a 19th-Century “Vampire” Buried in Griswold, Connecticut**  
*Jennifer Higginbotham - AFMES/AFDIL/SNA International*
- 3:45 PM**      **Update of the FBI Laboratory Rapid DNA Program**  
*George Li - FBI Laboratory*
- 4:15 PM**      **Persistence and Recovery of DNA on Submerged Duct Tape**  
*Luisa V. Forger - FBI*
- 4:30 PM**      **Examination of DNA Extraction Lysis and Wash Step Modification for Low Template DNA Sample Processing**  
*Sydney Menchhoff - Virginia Commonwealth University*
- 4:45 PM**      **Generation of Interpretable, Single Source, DNA Profiles from Forensically Relevant Mixtures Through the Separation of Cells with Optical Tweezers and a Modified DNA Workflow**  
*Michael Valle - Virginia Commonwealth University*
- 5:00 PM**      **Evaluation of Sperm-Specific Antibodies for Bead-Mediated Cellular Separation of Sexual Assault Samples**  
*Jordan O. Cox - Virginia Commonwealth University*

### Friday, May 10<sup>th</sup>

- 8:30 AM**      **Developing Investigative Leads from a Probabilistic Genotyping Database**  
*David Bauer - Cybergenetics*
- 9:00 AM**      **Forensic Body Fluid Identification Using Microbiome Signature Attribution Through 16S rDNA High-Throughput Sequencing**  
*Raquel Green - Virginia Commonwealth University*
- 9:30 AM**      **Using Probabilistic Genotyping to Distinguish Family Members**  
*Beatriz Pujols - Cybergenetics*
- 10:00 AM**      **BREAK**
- 10:15 AM**      **DNA Group Discussion - Because It's In Our Genes...and On Our Brains**  
*Ruth Damaso Neely, Moderator - Virginia Department of Forensic Science*
- 10:45 AM**      **Exonerating the Innocent with Probabilistic Genotyping**  
*Jennifer Hornyak - Cybergenetics*





# Presentations

## Criminalistics Section — Salon D

### Thursday, May 9<sup>th</sup>

- 2:30 PM**      **Trace Evidence: Then, Now and Moving Forward**  
*Tatiana Trejos - West Virginia University*
- 3:00 PM**      **Modern Fast Screening of Inorganic and Organic Gunshot Residue (GSR) by Laser-Induced Breakdown Spectroscopy (LIBS) and Electrochemistry (EC)**  
*Korina Menking-Hoggatt - West Virginia University*
- 3:15 PM**      **Ignitable Liquid Classification of Small Engine Fuels and a Survey of Accelerant Detection Canine Responses**  
*Lisa Schwenk - Bureau of Alcohol, Tobacco, Firearms & Explosives*
- 3:30 PM**      **Attribution Signatures for Sourcing of Medwakh and Scorpion Dokha**  
*Thomas Orianna - Towson University*
- 3:45 PM**      **BREAK**
- 4:00 PM**      **Breakout Session for Criminalistics Sub-Disciplines**  
*Moderator: Cathy Savage - Maryland State Police Forensic Sciences Division*

### Friday, May 10<sup>th</sup>

- 8:30 AM**      **A Novel Approach for Increased Objectivity in Detecting Gunshot Residues Around Bullet Orifices**  
*Courtney Vander Pyl - West Virginia University*
- 8:45 AM**      **Determining the Method Threshold of Identification via Gas Chromatography-Mass Spectrometry of Weathered Gasoline Extracted from Burnt Polyester Carpet**  
*Stacy Davis - Towson University*
- 9:00 AM**      **Putting the Pieces Together: Developing and Applying a Systematic Method for the Comparison of Duct Tape Edges**  
*Meghan Prusinowski - West Virginia University*
- 9:15 AM**      **Quantitation of CBD and THC in Commercially Available CBD-oil Supplements by Gas Chromatography-Mass Spectrometry**  
*William Moats - Waynesburg University*
- 9:30 AM**      **Potential Screening Techniques for Indazole-Based Synthetic Cannabinoids**  
*Michael Cipoletti - Waynesburg University*
- 10:00 AM**      **BREAK**
- 10:15 AM**      **Metabolite Elucidation of the Synthetic Cannabinoids: PX-1, PX-2, PX-3 in Human Liver Microsomes.**  
*Travon Cooman - West Virginia University*
- 10:30 AM**      **LC-MS/MS Quantitation of Fentanyl and Metabolites from *Lucilia Sericata* Larvae and Liver Tissue Using a Validated Modified QuEChERS Extraction**  
*Joseph Cox - West Virginia University*
- 10:45 AM**      **Synthetic Drug Surveillance in Public Health**  
*Brandon Jones - Washington, DC Department of Forensic Sciences*
- 11:00 AM**      **SWGDRUG Update**  
*Juli Cruciotti - Virginia Department of Forensic Sciences*
- 11:15 AM**      **Forensic Electrochemistry and Mass Spectrometry: The Perfect Match to Tackle Fentanyl and Other Novel Psychoactive Substances**  
*Colby Ott - West Virginia University*





# Presentations

## Questioned Documents Section — Warf A/B

### Thursday, May 9<sup>th</sup>

- 2:30 PM**      **How the Examination of Documents has Changed**  
*Ronald Morris - RNM & AI*
- 2:45 PM**      **Bank Robbery Note File**  
*Katelyn Bruno - Department of Justice*
- 3:15 PM**      **Spectroscopic Analytical Tools for the Discrimination of Black Ink on Pharmaceutical Packaging: Tackling Counterfeits**  
*Emily Haase - West Virginia University*
- 3:30 PM**      **Increasing TSA Counterfeit Detection Capability: A Human Performance Approach**  
*Don Morrison - DHS/Transportation Security Administration*
- 4:00 PM**      **Who Threatened The Sheriff? How Non-Contemporaneous Handwriting Standards Helped to Close the Case**  
*Antoine Frazier - FBI*
- 4:15 PM**      **Fraud Detection and Remediation (FDR)**  
*Patrice Aasmo - American Association of Motor Vehicle Administrators*
- 4:45 PM**      **Rocketbook: The Endlessly Reusable Smart Notebook**  
*Erica Murray - FBI*

### Friday, May 10<sup>th</sup>

- 8:30 AM**      **Needles in a Haystack: an Intro to the Scope of Document Examinations Undertaken by the DHS/CE/HSI Forensic Lab**  
*Elaine Wooton - DHS-ICE-HSI Forensic Laboratory*
- 9:00 AM**      **Do Individuals Disguise Their Handwriting in a Same/Similar Manner Each Time?**  
*Brandi Ragsdale - FBI*
- 9:30 AM**      **Face Recognition: Matching Mugshots with Face Photos from ID Documents**  
*Thirimachos Bourlai - West Virginia University*
- 10:00 AM**      **Ethics in Forensic Science**  
*Robin Bowen, West Virginia University*
- 10:30 AM**      **Counterfeit Currency Trends**  
*Julia Barker - United States Secret Service*
- 11:00 AM**      **Forensic Document Examination - Rethinking Conclusion Language (an update on the OSAC conclusion standard)**  
*Elaine Wooton\*- DHS-ICE-HSI Forensic Laboratory*
- 11:30AM**      **A Primer on Digital Forensics**  
*Paul Ondercin - Federal Bureau of Investigation - Pittsburgh Division*





# Notes