



**Mid-Atlantic Association  
of Forensic Scientists  
Annual Meeting**

# Forensics on the Water



**May 18 - 22, 2015  
Hyatt Regency Chesapeake Bay  
Cambridge, MD**





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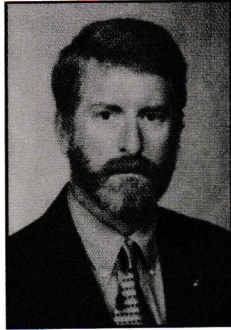
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## Keynote Speaker



# Eugene Peters

Counterterrorism and Forensic Science Research  
FBI Laboratory

## Geographic Attribution of Trace Evidence: An Interdisciplinary Approach

Geographic attribution is the term used in the FBI Laboratory to describe the analysis of evidence to determine its geographic origin, or possibly areas through which the evidence has traveled. Also described by other terms, this analysis goes back to the very beginnings of forensic science, and indeed, is used in a wide variety of other applications, including civil litigation, environmental protection, and now, intelligence applications.

This talk will explore new directions in geographic attribution of trace evidence, how the underlying principles from forensic science and other disciplines are and can be used in novel applications, and how advances in other disciplines can help improve geographic attribution.

Gene Peters is Chief of the Counterterrorism and Forensic Science Research Unit at the FBI Laboratory in Quantico, Virginia. He leads a staff of approximately 40 that conduct research to develop new capabilities, improve existing processes, and support admissibility defense in forensic sciences.

Prior to joining the FBI, he served in a variety of leadership positions at the U.S. Nuclear Regulatory Commission, where he led post-closure safety evaluations for the proposed national spent nuclear fuel repository.

In addition, he spent 14 years as a scientific consultant and 5 years on active duty as a U.S. Marine Corps officer.

He holds degrees in Geological Sciences from the University of Rochester and in Environmental Engineering and Science from Johns Hopkins University.



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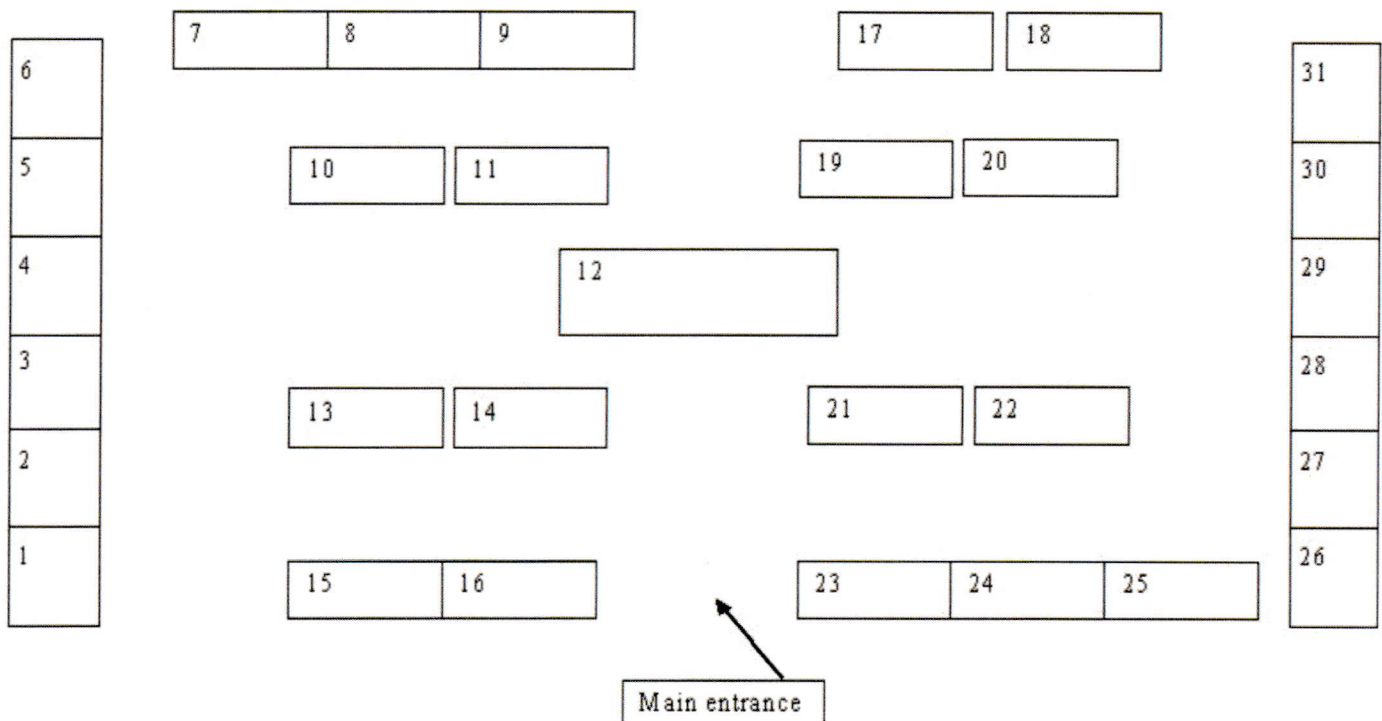
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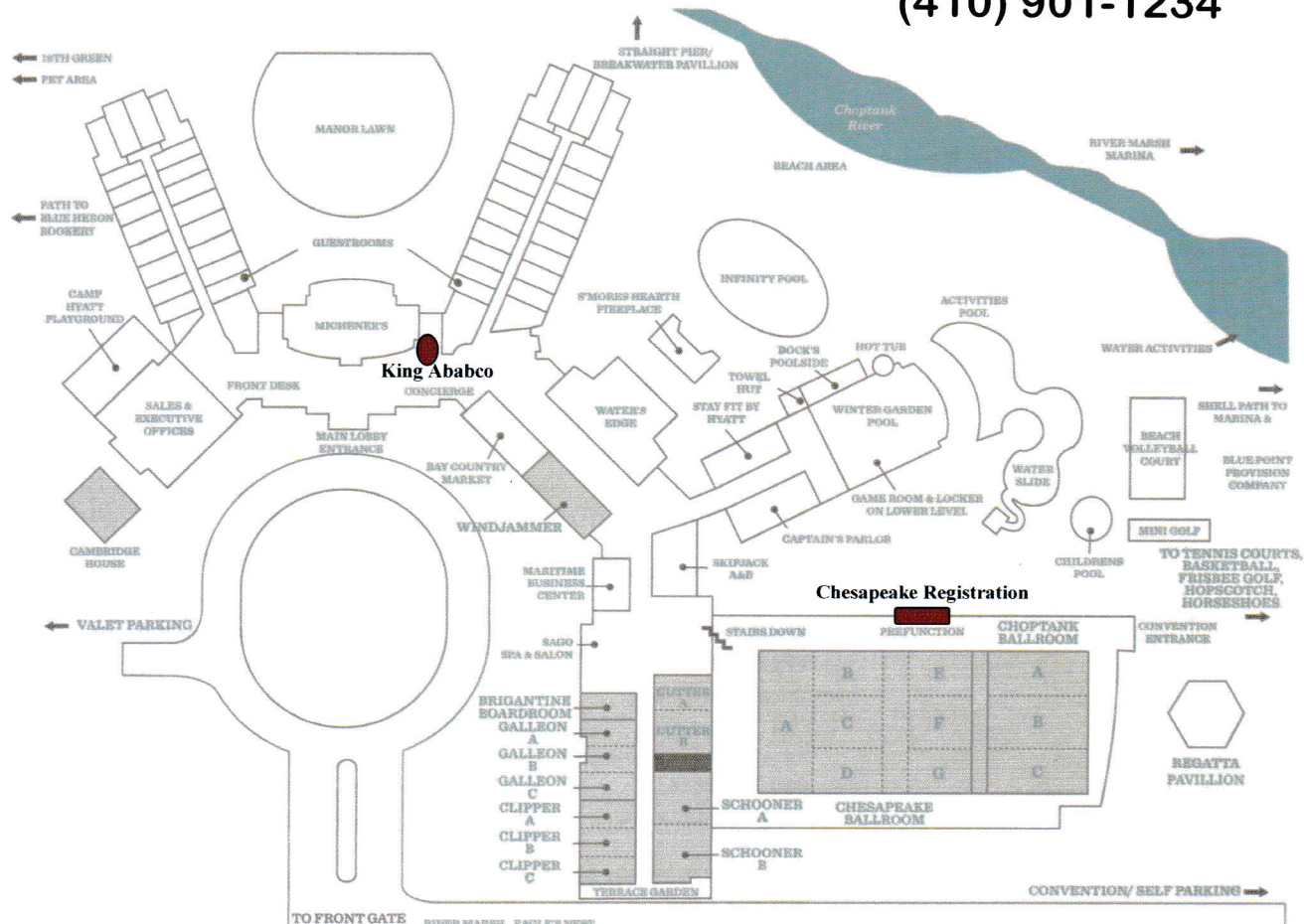
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# Hyatt Regency Chesapeake Bay

**100 Heron Blvd**  
**(410) 901-1234**



## Floor Key:

Registration.....**King Ababco/Chesapeake Registration**  
MAAFS Office.....**Brigantine Boardroom**  
Plenary/Keynote/Business Meeting.....**Chesapeake EFG**  
Biology Section.....**Chesapeake EFG**  
Criminalistics Section.....**Galleon AB**  
QD Section.....**Galleon C**

Breaks (M-T).....**Galleon/Choptank Foyers**  
Breaks (W-F).....**Chesapeake/Galleon Foyers**  
FLEX Social.....**Windjammer**  
Breakfast(M-T)/Lunch(M).....**Michener's Library**  
Lunch(T).....**Choptank A**  
Breakfast (W,F)/Lunch (W-R).....**Choptank Ballroom**  
Breakfast (R).....**Chesapeake ABCD**  
Gala.....**Regatta Pavilion**  
Hospitality Suite.....**Chesapeake Suite**

Vendors/Cocktail Reception.....**Chesapeake ABCD**  
Vendor Spotlight.....**Chesapeake EFG**  
Vendor Reception.....**Cambridge House**

## Workshop Locations:

Mixture Interpretation and Use of STRmix™.....**Galleon BC**  
Marijuana Extractions.....**Galleon A**  
Academic Practitioner Collaboration.....**Galleon C**  
Familial DNA Search.....**Galleon AB**  
Current Trends in Explosives.....**Choptank C**  
Biometrically Captured e-Signatures.....**Choptank B**  
FEPAC Inspector Training.....**Galleon C**  
Mixture Interpretations using TrueAllele®.....**Galleon AB**  
DART Mass Spectroscopy.....**Choptank C**

ABC Exam.....**Clipper C**

## BADGE COLOR KEY:

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





# Schedule

## Sunday, May 17<sup>th</sup>

5:00 - 8:00	Registration	King Ababco
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## Monday, May 18<sup>th</sup>

7:00 – 5:00	Registration	King Ababco
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7:00 - 8:00	Breakfast ( <i>ticket required</i> )	Michener's Library
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9:00 - 11:00	Continuous Break	Galleon Foyer
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<b>8:00 – 5:00</b>	<b>Mixture Interpretation and Use of STRmix™</b>	Galleon BC
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11:30 – 1:00	Lunch ( <i>Ticket Required</i> )	Michener's Library
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<b>1:00 – 5:00</b>	<b>Marijuana Extractions</b>	Galleon A
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2:00 – 4:00	Continuous Break	Galleon Foyer
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5:00	Dinner (on your own)	
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9:00 – 12:00	Hospitality Suite	Chesapeake Suite
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## Tuesday, May 19<sup>th</sup>

7:00 – 5:00	Registration	King Ababco
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7:00 - 8:00	Breakfast ( <i>Ticket Required</i> )	Michener's Library
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9:00 - 11:00	Continuous Break	Galleon Foyer/Choptank Foyer
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<b>8:00 – 5:00</b>	<b>Biometrically Captured e-Signatures</b>	Choptank B
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<b>8:00 – 11:30</b>	<b>Academic Practitioner Collaboration</b>	Galleon C
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<b>Familial DNA Search</b>	Galleon AB
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<b>Current Trends in Explosives and Fire Debris</b>	Choptank C
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11:30 – 1:00	Lunch ( <i>Ticket Required</i> )	Choptank A
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<b>1:00 – 5:00</b>	<b>FEPAC Inspector Training</b>	Galleon C
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<b>Mixture Interpretation Using TrueAllele®</b>	Galleon AB
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<b>DART Mass Spectroscopy for Forensic Analysis</b>	Choptank C
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2:00 – 4:00	Continuous Break	Galleon Foyer/Choptank Foyer
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5:00	Dinner (on your own)	
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<b>5:30</b>	<b>Executive Board Meeting</b>	Windjammer
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<b>6:00</b>	<b>ABC Exam</b>	Clipper C
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9:00 – 12:00	Hospitality Suite	Chesapeake Suite
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# Schedule

## Wednesday, May 20<sup>th</sup>

7:00 – 5:00	Registration	Chesapeake Registration Center
7:30 - 9:00	Breakfast	Choptank Ballroom
9:00 - 11:00	Continuous Break	Chesapeake Foyer
<b>9:00 – 11:30</b>	<b>Plenary Session</b>	Chesapeake EFG
	<i>9:00 - 10:00 -Maryland Forensic Laboratories Regulations – A 2015 Update</i>	
	<i>10:00 - 11:30 -An NCFS Subcommittee Update</i>	
11:30 – 1:00	Lunch	Choptank Ballroom
<b>1:00 – 4:30</b>	<b>Biology Section</b>	Chesapeake EFG
	<b>Criminalistics Section</b>	Galleon AB
	<b>Questioned Documents Section</b>	Galleon C
2:00 – 4:00	Continuous Break	Galleon Foyer/Chesapeake Foyer
	<i>Sponsored by</i> <b>Thermo</b> SCIENTIFIC	
<b>5:00 – 7:00</b>	<b>Welcoming Cocktail Reception</b>	Chesapeake ABCD
	<i>Sponsored by</i> <b>SHIMADZU</b> Excellence in Science	
7:00	Dinner (on your own)	
<b>7:00 – 8:00</b>	<b>Vendor Reception</b>	Cambridge House
	<i>Reception for Vendors, MAAFS Executive Board &amp; Meeting Committee Only</i>	
9:00 – 12:00	Hospitality Suite	Chesapeake Suite

## Thursday, May 21<sup>st</sup>



7:00 – 5:00	Registration	Chesapeake Registration Center
7:30 – 8:30	Breakfast	Chesapeake ABCD
<b>7:30 – 5:00</b>	<b>Vendor Area</b> <i>(Please visit the vendors)</i>	Chesapeake ABCD
<b>8:00 – 11:00</b>	<b>Vendor Spotlight</b>	Chesapeake EFG
	<i>Door Prizes will be given out after each presentation</i>	
9:00 - 11:00	Continuous Break <i>(Please visit the vendors)</i>	Chesapeake ABCD





# Schedule

## Thursday, May 21<sup>st</sup> (continued)

11:15 - 12:15	<b>Keynote Speaker – Eugene Peters</b> <i>Geographic Attribution of Trace Evidence: An Interdisciplinary Approach</i>	Chesapeake EFG
12:15 - 1:30	Lunch	Choptank Ballroom
1:30 – 4:00	<b>Biology Section</b> <b>Criminalistics Section</b> <b>Questioned Documents Section</b>	Chesapeake EFG Galleon AB Galleon C
2:00 – 4:00	Continuous Break <i>(Please visit the vendors)</i> <i>Sponsored by</i> 	Chesapeake ABCD
4:00 - 4:45	<b>Student Flex Social</b> <i>(pre-registration required)</i>	Windjammer
5:00 – 7:00	<b>Business Meeting</b>	Chesapeake EFG
7:30– 12:00	<b>Forensics on the Water Gala</b> <i>(Food 7:30—9:30)</i> <i>Sponsored by</i> 	Regatta Pavillion
12:00 - 1:00	Hospitality Suite	Chesapeake Suite

## Friday, May 22<sup>nd</sup>

7:30 - 8:30	Breakfast	Choptank Ballroom
8:30 - 11:00	Continuous Break <i>(Please visit the vendors)</i>	Galleon Foyer/Chesapeake Foyer
8:30 – 12:00	<b>Biology Section</b> <b>Criminalistics Section</b>	Chesapeake FG Galleon AB

See You in 2016



# Agenda

## Criminalistics Sessions

## Galleon AB

- Wednesday 1:00 The Use of UHPLC in Forensic Drug Analysis  
1:25 Analytical Challenges in the Identification of Dipyrone  
1:50 Forensic Examination of Oriented Polymer Films: Polarized - Light Examinations of Packaging and Shipping Tapes  
2:30 The Importance of Recognition of NBOMe Intoxication in Death Investigation  
3:05 The Good, the Bad and the Ugly: Transitioning from Bench to Management  
3:30 Evaluation of the Vapor-Time Profiles of Non-Explosive PDMS Canine Training Aid by Automated Training Aid Simulation using SPME(ATASS)  
3:55 Bring Your Own Slides
- Thursday 1:30 The Effects of Burning and Mold Growth on the Chemical Analysis of Firelog Fuels  
1:55 Visualizing Latent Fingerprints Using Columnar Thin Films  
2:45 Ethic, Education and the E Street Band  
3:10 Collection and Analysis of Fire Debris Evidence in Detecting Methamphetamine, Pseudoephedrine, and Ignitable Liquids in Fire Sciences at Suspected Clandestine Laboratories  
3:35 The Analysis of GSR through LA-ICP-TOF-MS  
4:00 Break out discussion topics
- Friday 8:45 Yopo seeds: An abundant source of Bufotenin, a Schedule I Psychedelic Drug  
9:10 Positional Isomer Determination of Substituted Phenethylamines by HPLC  
9:35 Arsenic and Old Lace: A Case of Atypical Mortuary Treatment at the Columbian Harmony Cemetery (51NE049), Washington, D.C.  
10:00 Use of Low Thermal Mass Gas Chromatography Columns for Forensic Drug Analysis

## Questioned Documents Sessions

## Galleon C

- Wednesday 1:00 Additional Empirical Studies Pertaining to the Uniqueness of Handwriting  
1:30 Application of Image Fusion in a Decipherment Case  
2:15 Bring Your Own Slides
- Thursday 1:00 Storage Unit Treasures  
1:20 Addressing Hand Printing Examination and Comparisons in Daubert Hearings  
1:40 "Lions, Tigers, and Bears": Approved Standards for Scientific Testimony and Report Language





# Agenda

## Biology Sessions

## Chesapeake EFG

- Wednesday
- 1:00 Bring Your Own Slides
  - 1:50 Maximize Information from Your Mixture Samples Using a Combined Autosomal STR and Y-STR Multiplex System
  - 2:20 Rapid DNA Response: On the Wings of TrueAllele
  - 2:55 Development of a Pre-Screening qPCR Mixture Detection Assay Using High Resolution Melting Curve Analysis of the STR Loci D5S818 and D18S51
  - 3:15 Highly Multiplexed Analysis of STRs and SNPs Using Massively Parallel Sequencing: Concordance with Current Methodologies
  - 3:25 Evaluation of extraction methods for DNA analysis of maggot crop contents
  - 3:50 High Throughput Sequencing of MicroRNAs in Forensically Relevant Biological Fluids for the Identification of Body Fluid Specific miRs
  - 4:10 "A Perfect Plan"
- Thursday
- 1:30 Development of the QIAGEN Investigator 24plex-Global STR Analysis Including Quality Control
  - 2:00 Evaluation and Validation of New Primer Sets to Overcome Challenging Samples in the Mitochondrial DNA Unit at the Virginia Department of Forensic Science
  - 2:30 Rapid DNA Enhancement of CODIS and NDIS
  - 2:45 Evaluation of a Wet-Vacuum Forensic DNA Collection System as a More Efficient Technique for the Collection of Epithelial Cells
  - 3:30 Rapid DNA: Internal Validation Study and Operational Planning
- Friday
- 8:30 Use of Kinship Analysis to Aid in the Identification of Kandahar Massacre Victims
  - 8:50 STR Sequence Diversity in Population Samples and Implications for Mixture Analysis
  - 9:30 Optimization of an mtDNA Nextera XT Protocol for Use with Population and Reference Samples
  - 10:00 New Y-Screen Assay using Quantifiler® Trio DNA Quantification
  - 10:40 Evaluation of touch DNA samples from property crimes using a magnetic bead based extraction method
  - 11:00 Sex, Lies, and Immunochromatic Cards
  - 11:30 Sperm Cell Detection Via Proximity Ligation Real Time PCR



# Notes