



CALIFORNIA ASSOCIATION OF CRIMINALISTS

Once Upon a Crime in Hollywoodland

2024 Seminar • Los Angeles, CA • April 15th-19th, 2024

Hosted by the Los Angeles Police Department Forensic Science Division

Register online at <http://seminar.cacnews.org>



Workshop Descriptions

Full Day workshops includes lunch. Two Half-Day workshops on same day include lunch.

Once Max Number of Registrants for a workshop has been reached, a waitlist will be created in the attempt to fulfill all interest.

Registration after **March 15, 2024**, a late fee of \$50 per workshop will apply

Shuttles will be available from the Biltmore to Off-site Locations

Monday, April 15th

Name: Arson Crime Scene Investigation Techniques and Evidence Processing

Time: Full Day

Location: Frank Hotchkin Memorial Training Center, 1700 Stadium Way, Los Angeles CA 90012

Presenter: Gus Gaeta, LAFD Arson and Counter Terrorism Section

Max Number of Registrants: 30

CAC MEMBER: \$200	NON-MEMBERS: \$225
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The Los Angeles City Fire Department Arson Counter-Terrorism Section (LAFD ACTS) will be hosting an eight-hour workshop on arson crime scene investigation and processing. The workshop will begin with a classroom-style lecture on fire behavior, ignitable liquids, arson techniques (e.g., Molotov cocktail, delayed ignition), points of origin, investigation techniques, sample collection, booking, and processing. After the lecture, the participants will take part in several simulated arson crimes scenes involving the burning of two vehicles and a makeshift structure, the deploying of Molotov cocktails, investigation techniques, and the collection of evidence for DNA, latent prints, and ignitable liquids. During the simulated crime scene processing, arson investigators will also demonstrate the use of accelerant detection K-9's in helping search for ignitable liquids. By participating in this workshop, participants will learn valuable techniques and strategies for investigating and processing evidence from an arson crime scene.

Name: Breath Alcohol Wet Lab

Time: Full Day

Location: Hertzberg- Davis Forensic Science Center

Presenters: Denise King and Shannon Bourne, LAPD Toxicology/ Blood Alcohol

Max Number of Registrants: 14

CAC MEMBER: \$200	NON-MEMBERS: \$225
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Participants will be observing and collecting data on drinkers in a social drinking situation for the purpose of determining the time it takes to reach linear elimination. Drinkers will self-assess intoxication on a survey worksheet to be collected by the participants. Alcohol levels will be determined with periodic breath testing and participants will be responsible for collecting data and tracking alcohol consumed.

Name: DNA Workshop: High Throughput Automation

Time: Full Day

Location: Hertzberg- Davis Forensic Science Center

Presenter: Multiple presenters

Max Number of Registrants: 80

CAC MEMBER: \$200	NON-MEMBERS: \$225
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This 8- hour workshop explores the application of the latest technologies to enable high-throughput automation within a DNA lab. The workshop will cover a range of robotic solutions that help increase efficiency and productivity while still maintaining the flexibility to adapt a variety of methods that forensic DNA labs require.

Presentations include talks from Promega, Qiagen, Bode Technology, Thermo Fisher, Hamilton, Verdugo Regional Crime Lab, DNA Labs International, and the Serology/ DNA Unit at LAPD.

Name: NIST-Firearms (Congruent Matching Methods) (Limit 30 people)

***Sponsored by the A. Reed and Virginia McLaughlin Endowment*

Time: Half Day, PM

Location: Biltmore Hotel

Presenter: John Song, NIST

Max Number of Registrants: 30

CAC MEMBER: FREE**	NON-MEMBERS: \$125
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The congruent matching (CM) methods are developed at NIST for automatic and objective firearm evidence identification and estimation of the weight of evidence. The CM methods are based on discretization – it divides a firearm tool mark image into small correlation cells and uses pairwise cell correlations instead of comparisons of the entire images. Multiple identification parameters are used to quantify the topography similarity of the correlated cell pairs and the pattern congruency of the cell registration locations on both evidence and reference images. Test results showed that when the number of congruent matching cell pairs was equal to or greater than an identification criterion, that the two samples may originate from the same firearm.

Three CM methods, congruent matching cells (CMC), congruent matching features (CMF) and congruent matching profile segments (CMPS) method are developed and verified for identification of the cartridge case and bullet images. A statistical procedure was also developed for estimation of the weight of evidence. NIST has completed a small business innovation research (SBIR) project aiming to implement the CM methods into a commercial software package to support firearm examiners' case work and court testimony. In this workshop, we discuss the challenge in firearm evidence identification, introduce the structure, algorithm and usage of different CM methods and the procedure of estimating the weight of evidence. We invite firearm examiners to discuss and test the congruent matching methods, algorithms, and error rate procedures, to identify weaknesses and provide suggestions for further improvement.

Tuesday, April 16th

Name: Sig Sauer P320 armorer's certification (Law Enforcement Only)

Time: Full Day

Location: Hertzberg- Davis Forensic Science Center

Presenter: TBA approximately 60 days out from workshop

Max Number of Registrants: 30

CAC MEMBER: \$345	NON-MEMBERS: \$370
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This workshop focuses on the mechanical functioning, disassembly/reassembly, maintenance, troubleshooting, and field repair of the SIG SAUER P320 pistol. Firearms will be provided by the instructor for this workshop. Registration for law enforcement/crime lab personnel only. Please bring valid ID. Contact workshop coordinator for questions about eligibility. A three (3) year factory certification is issued upon successful course completion.

Name: Vehicle-Hidden Compartment workshop

Time: Full Day

Location: Hertzberg- Davis Forensic Science Center

Presenter: Nick Ramos, Founder/Director of Training, Public Safety Alliance

Max Number of Registrants: 40

CAC MEMBER: \$200	NON-MEMBERS: \$225
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This workshop will focus on a multitude of concealment methods of drugs, guns, currency, and other paraphernalia. Instruction will be provided on the recovery of these and other items which hold evidentiary value. The workshop will have lecture followed by hands-on vehicle searches and evidence processing.

Name: Courtroom Communication: Can Improv Help Scientists to Talk about Forensics?

Time: Full Day

Location: Biltmore Hotel

Presenters: Julie Burrill, PhD & Josh Rice, MFA, Alan Alda Center for Communicating Science, Stony Brook University

Max Number of Registrants: 24

Note: If workshop reaches capacity, and enough interest is expressed, an additional workshop may be offered Monday, April 15th

CAC MEMBER: \$250	NON-MEMBERS: \$275
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Communicating forensic science is an essential aspect of the criminal justice process. Challenges in the courtroom include the interrogative structure, varied audiences, specialized language and adversarial narratives. This workshop addresses those challenges using research-driven communication principles to help forensic scientists convey complexity while preserving accuracy. The Alda Method is a unique communication training technique blending improvisational theater with audience-focused design strategies. Driven by the adaptability and active listening central to improvisation and the empathy and connection prescribed by social science research, the Alda Method helps scientists effectively engage with non-expert audiences. Participants should expect active involvement and iterative moot testimony practice.

Learning outcomes include: learning to recognize structural challenges to clear and vivid communication and develop strategies to address them; using specific skills like analogy building, active listening, language adjustment, and engaging with challenging questions; practicing reframing scientific conversations and communication goals around the audience (jury) experience.

No required prerequisite knowledge. Intended audience is testifying forensic scientists. However, communication principles are also helpful for those scientists involved in investigations and teaching.

Name: Microspectrophotometers for Trace Evidence and Interpretation of Spectra

Time: Half Day, AM

Location: Biltmore Hotel

Presenter: Jon Burdett, Ph.D., CRAIC Technologies

Max Number of Registrants: 45

CAC MEMBER: \$100	NON-MEMBERS: \$125
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This workshop will introduce participants to the core working principles of microspectrophotometers, including spectroscopic techniques and microspectrophotometer design, in order to provide a strong foundation for the critical analysis of obtained spectra. Basic analysis and accepted workflows for standard trace evidence samples will be presented, including standard analytical practices for using microspectrophotometers on fibers, paints, documents, and glass. Guidelines for spectral interpretation will also be presented with example spectra used for application of these guidelines and to facilitate discussion among participants.

After this workshop, attendees will have learned the operating principles of microspectrophotometers, standard applications for microspectrophotometers in trace evidence, key characteristics of unique situations where microspectrophotometers can be applied, and how to analyze and compare the measured spectra.

Name: Thermo Fisher - Powering Productivity: Utilizing advanced technologies and workflows to benefit your lab

Time: Half Day, AM

Location: Biltmore Hotel

Presenter: Danielle Jardel, Geno Ferrera, and Courtney Patterson, Thermo Fisher

Max Number of Registrants: 55

CAC MEMBER: \$100	NON-MEMBERS: \$125
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In this 3-Part workshop, you will learn about powerful solutions to match the changing forensic landscape from three Thermo Fisher experts in the field of forensics. We invite you to attend our workshop where you will learn about innovations to our forensic portfolio – from updates to our class-leading genetic analyzers and related software, to safety advancements that enable quick identification of narcotics in the field, to routine analysis of urine and blood for DUID and crime cases using LC-MS analytical instrumentation.

Part 1 of our workshop will catch you up on the latest innovations for the DNA lab. Focus will include The Applied Biosystems™ SeqStudio Flex Series Genetic Analyzer, the newly released software, GeneMapper ID-X v1.7 (which supports analysis of data from the new SeqStudio Flex instrument as well as RapidHIT ID data), and finally the Applied Biosystems RapidLINK Software and the new RapidINTEL Plus Cartridge that will maximize your workflow capabilities.

Part 2 of the workshop will cover portable analytical instrumentation for quick decision making in critical situations. Thermo Fisher Scientific offers a wide range of instruments to identify the components of seized drugs from our handheld TruNarc™ Raman Spectroscopy analyzers to our Gemini™ analyzer, combining FTIR and Raman technologies in one. We'll share how our handheld analyzers work to identify the seized drugs found at a crime scene. Through a live demo, attendees will be able to understand how this powerful technology works and the ease incorporating it into your criminal justice departments and labs.

Part 3 of our workshop will explore LC-MS technologies for forensic analysis. An important aspect of forensic science is the ability to test biological samples for drugs of abuse as it relates to DUID or criminal cases. Whether you are interested in routine testing of urine or blood on our triple quadrupole mass spectrometers, looking for unknown drugs in a biological sample using our high-resolution accurate mass Orbitrap™ mass spectrometers, or eliminating the need for sample prep and chromatography all together to quickly test matrix spots and seized drugs on our VeriSpray™ PaperSpray Ion Source, we have you covered. Thermo Fisher Scientific's wide range of analytical instruments allows us the ability to find the right instrument to best fit your needs.

Name: Agilent He to H₂ Conversion/Hydro Inert Source workshop

Time: Half Day, PM

Location: Biltmore Hotel

Presenter: Kirk Lokits, Ph.D, GCMS Applications Scientist, Agilent Technologies, Inc.

Max Number of Registrants: 55

CAC MEMBER: \$100	NON-MEMBERS: \$125
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This workshop will be comprised of 3 presentations. The first presentation will focus on the fundamental GC aspects of column selection, inlet, flow path troubleshooting, and maintenance. The MS portion will cover the fundamental aspects of MS operational theory, tuning, optimizing acquisition parameters for spectral fidelity, and method stability. Attendees will have the opportunity to perform hands-on disassembly and reassembly of an EI source, discuss best practices for cleaning the source, and logical troubleshooting and maintenance of the MS and vacuum system.

The second presentation will discuss how analysts can determine if hydrogen can be used as a carrier gas for their specific analyses. The illustration of best practices for the column configuration, method parameters, and specific MS source configurations will be discussed. Attendees will also learn overall acquisition parameters to determine if the transition of a specific application is compatible for hydrogen carrier gas under their laboratory's current GCMS methods.

The third presentation is a research study that demonstrates several recent advances in inert coatings on the mass spec source assembly, found in the Agilent Technologies Hydroinert™ Source, can be successfully incorporated into utilizing hydrogen as an alternative carrier gas in the current screening methods involving street drug samples. This work seeks to demonstrate the reduced reactivity of hydrogen on the source surface, resulting in an increase in some analyte responses and increased spectral fidelity in conjunction with the Hydroinert™ source. There is also an increase in the speed of analysis due to the use of hydrogen as the carrier gas and a 20m x 180 μm x 0.18 μm column. The advancement of the Hydroinert™ source helps to mitigate many of the issues encountered in GCMS analysis when utilizing hydrogen as the carrier gas. Incorporating nitrogen as a GCMS carrier gas will also be discussed using an inert extractor source along with acquisition parameters and comparative results from forensic street drug samples under helium, hydrogen, and nitrogen carrier gases.