

VirtuaLEVA 2020 RECORDED SESSION DESCRIPTIONS

In Alphabetical Order

* Indicates presentation by a corporate representative

W = Workshop (hands-on)

L = Lecture

Accreditation? ISO 17025? What's This All About? L 90 Minutes

This presentation will provide an overview of a forensic laboratory accreditation program. It will cover the general requirements of the ISO 17025 standard and how the Ohio Division of State Fire Marshal Forensic Laboratory works towards meeting the requirements with special emphasis on video forensics. Finally, there will an overview of the laboratory assessment process.

Presenters: Bradley Barkhurst is a LEVA Certified Forensic Video Analyst and, since 2016, a Forensic Specialist Supervisor with the Ohio Division of State Fire Marshal Forensic Laboratory. Prior, he worked for ten years as a forensic video analyst with the Ohio Organized Crime Investigations Commission. He holds a BFA in electronic media from the University of Cincinnati. He is currently pursuing a Master of Science degree from the University College of Dublin, Ireland Centre for Cybersecurity and Cybercrime Investigation and expects to graduate in 2020. In 2020, he obtained a forensic video examiner certification with the International Association of Identification. Bradley is a LEVA Board member and an active member in IAI, HTCIA and MORPCA.

Chris Corpora is a LEVA Certified Forensic Video Analyst who works on Audio and Video Analysis at the Santa Clara County Crime Laboratory in San Jose, CA. Chris has been a Technical Assessor for ANAB (previously ASCLD/LAB) in the area of Digital Evidence since 2015 and has completed four external lab assessments and numerous other internal audits at his own lab since he started working there almost 20 years ago.

Sonja Rawn is currently the Quality Manager at the Ohio Division of State Fire Marshal Forensic Lab (DSFM-FL) and Associate Professor of Instruction at Ohio University. She has been employed at that lab for over 23 years. During that time she has served as Quality Manager, Forensic Lab Chief, and Chemist. As Lab Quality Manager, she oversees all aspects of accreditation compliance and has successfully led through three accreditation cycles including the initial accreditation, transition from the ASCLD-LAB Legacy to International accreditation programs, the ASCLD-LAB to ANAB transition, and the latest transition to the ANAB ISO 17025-2017 and supplemental requirements.

***Advanced File Analysis and Interpretation L 90-minutes**

Take an in-depth look at some of the information held within a video file and how it is interpreted. Look at stream timing, format differences and the old favorite of encoding reliability. What are the facts, what's unreliable... and what requires further testing? Amped FIVE is featured to decode, convert, analyze and interpret the video evidence, but non-FIVE users will easily be able to follow on and gain valuable insight.

Presenter: David "Spready Spreadborough is a LEVA Certified Forensic Video Analyst. He was a police officer for 24 years including 12 years as a CCTV Investigator. In 2015, David became the International Trainer for Amped Software. He also sits on the UK Forensic Imagery Analysis Group and is part of the Chartered Society of Forensic Science working group in Forensic Video Analysis.

Adobe Premiere Pro CC for Digital Media Forensics: Basics – An Introduction W 4 hours

Adobe Premiere is a widely used video editing software. But, it's capabilities can be directed towards casework and with very effective results. Download a demo version of the software no more than one day before you want to participate. In the first of three sessions, you'll explore the following:

- 1- Project examples and why you should consider using Premiere Pro
- 2- Explore the interface
- 3- Setting up for your project
- 4- Basic editing techniques a) appropriate tools and techniques b) effect controls c) effects and transitions d) time remapping (speeding up and slowing down) e) scaling (enlarging and/or zooming) f) freeze frame
- 5- Exporting your file

Presenter: Angela Ellis is a LEVA Certified Forensic Video Technician and Media Forensic Specialist with the Pinellas County Sheriff's Office in Largo, Florida. Previous to law enforcement, she was a national broadcast commercial editor,

media manager for major motion pictures and a video content specialist. Angela received the Pinellas County Sheriff's Office Gold Star Award in 2019 for her demonstrative and visual investigative work for the Marjory Stoneman Douglas Public Safety Commission with regard to the Parkland High School, Florida mass shooting event on Feb. 14, 2018.

Adobe Premiere Pro CC for Digital Media Forensics: Intermediate – Titling and Captioning W 4 hours

In the second session of this triad of hands-on classes, learn how to incorporate titling and captioning to a case project that will assist everyone from the investigation to the court in better understanding the evidence.

- 1- Adding titles and annotations
- 2- Intro to keyframes
- 3- Adding effects that track
- 4- Working with sound
- 5- Captioning dialogue

Presenter: Angela Ellis (See above Adobe Premiere Pro Basics)

Adobe Premiere Pro CC for Digital Media Forensics: Advanced – Redacting Audio and Video W 4 hours

Redaction can be a significant and time-consuming task. In this third and final session, step up your game with these advanced processes to improve proficiency and accuracy.

- 1- Converting files to work within Premiere Pro
- 2- Keyframing masks
- 3- Video redaction using masking effect and mask tracking
- 4- Audio redaction using cut method and/or keyframing volume control

Presenter: Angela Ellis (See above Adobe Premiere Pro Basics)

***Calculating Vehicle Speeds L 90 Minutes**

As the proliferation of surveillance cameras continues around the world, there is a common misconception that the evidence generated by these systems can be easily used to calculate the speed of vehicles. Most video recording systems don't store accurate timing information. In this session, you will be provided with a step-by-step methodology walkthrough for calculating accurate timing information from surveillance cameras (taking into consideration variable refresh rates). The presentation will shed light onto common pitfalls that can lead to inaccurate speed measurements, depict some areas of on-going research, and ensure that attendees can follow a standard methodology for calculating vehicle speeds that can be performed on every case.

Presenter: Andrew Fredericks is a LEVA Certified Forensic Video Analyst and Technical Director for iNPUT-ACE: a video evidence software solution that is used by law enforcement agencies world-wide. As a forensic video analyst, Andrew has been qualified as an expert and testified in various courts in the USA and Canada. He specializes in decoding proprietary video file formats, video workflow automation, and conducting 3D laser scanning reverse projection. Andrew also teaches these methodologies to thousands of police investigators and forensic video analysts every year.

***Dealing with Deep Fakes L 90 Minutes**

This presentation provides a basic understanding of what to look for in terms of image authentication and what can be utilized in the field of video authentication. Understand what is a Deep Fake. What are steps to authenticate images. How is video authentication different from image authentication.

Presenter: Marco Fontani graduated in Computer Engineering (summa cum laude) in 2010 at the University of Florence (Italy). He earned a Ph.D. in Information Engineering in 2014 at the University of Siena with a dissertation entitled "Digital Forensic Techniques for Splicing Detection in Multimedia Contents". Marco is currently is an R&D Engineer at Amped Software. He participated in several research projects, funded by the EU and by the EOARD. He is the author or co-author of several journal papers and conference proceedings. He has also experience in delivering training to law enforcement and he provided expert witness testimony on several forensic cases involving digital images and videos.

***Designed To Conceal: Exploring Software Reliability Not Meant for Forensic Analysis L 90 Minutes**

A reliable understanding of a video file's metadata can be integral part of any analysis. Technicians/analysts often rely on open source software to evaluate metadata, but what happens if multiple tools provide different results? This presentation

will highlight the potential pitfalls of using software not designed for forensic analysis and how to ensure you obtain properly parsed metadata.

Presenters: Brandon Epstein is a LEVA Certified Forensic Video Analyst and Director of Training at Medex Forensics. Serving in law enforcement since 2007, Brandon has performed hundreds of digital forensic examinations involving thousands of hours of digital video and has been qualified as an expert witness over a dozen times in the past two years. He is finishing a Master of Science degree in Recording Arts – Emphasis on Media Forensics. He is active in professional organizations, including the Scientific Working Group on Digital Evidence, the IAI Forensic Video Certification Board, the IACP Cybercrime and Digital Evidence committee and ASTM Committee E30 on Forensic Science. Brandon is also a IAI Certified Forensic Video Examiner.

Bertram Lyons is the Managing Director, Software at Medex Forensics. He specializes in the analysis, management, and preservation of digital content. For fifteen years, Bertram worked as a digital archivist. His recent clients include the FBI, Smithsonian Institution, Paramount Pictures, Yale University, the Library of Congress, and the International Olympic Committee. Bertram, as a contractor, currently provides digital audio and video forensic analysis support for the FBI's Forensic Audio Video and Image Analysis Unit through customized training (for digital audio and video examiners) and customized software; he has been serving in that capacity for more than three years. He also is a member of the SWGDE Digital Video Working Group.

Encryption and Access L 90 Minutes

This presentation will address both legislative and industry efforts related to increased implementation of user only controlled encryption schemes versus lawful access to encrypted data and digital evidence. The presentation will consider both technical and legal barriers to access for device based (local) digital evidence as well as that controlled by service providers and other third parties. Attendees will gain a current understanding of these issues as they impact a broad landscape of digital evidence sources.

Presenter: Lt. Colonel James J. Emerson, USMC (Ret.), is Vice President at the National White Collar Crime Center (NW3C). Jim's more than 42 years of law enforcement and security background encompasses a wide spectrum of national security and public safety disciplines which include; a focus on cybercrime investigation, computer forensics, and seventeen years of related criminal intelligence. In addition to holding numerous certifications in cybersecurity and digital forensics, Jim has presented both evidence and expert testimony related to digital evidence in US Federal Court and trained law enforcement executives, criminal investigators, and prosecutors regarding digital evidence and forensics. Jim has been the Chairman of the International Association of Chiefs of Police Computer Crime and Digital Evidence Committee for over ten years and currently serves on a NCMEC task force to their Advisory Council.

***FFmpeg Fundamentals L 90-minutes**

This presentation will walk through the fundamentals of FFmpeg as described in the SWGDE document, with an emphasis with streamcopying proprietary file, and using some of the analysis features from the command line. Learn and understand some of the limitations of FFmpeg, but also many of the benefits for the daily toolbox and troubleshooting workflow.

Presenter: Blake Sawyer is the Technical Support and Trainer for Amped Software USA. He is a LEVA Certified Forensic Video Analyst, and IAI Certified Forensic Video Examiner, and loves to help the video community better understand how video works and how to get actionable evidence from video sources. He serves as the Video Chair of SWGDE, and is a member of the Digital Evidence OSAC Committee. Before working at Amped Software, Blake was a video examiner for the Plano Police in Plano, Texas.

Forensic Audio Advanced Techniques Using iZotope RX 7 W 4 hours

Explore more sophisticated applications within iZotope RX. Topics covered include clipping and distortion restoration, advanced noise reduction, machine learning noise reduction advantages, audio analysis tools and interpreting the results and keeping track of your processing and reporting. Hands-on practicals will bring to life what you're learning. Students will be directed to download demo versions to Mac or PC.

Presenter: Allen Combs is a LEVA Certified Forensic Video Technician. He is the chief forensic analyst for Combs Forensic Services, and has completed hundreds of forensic audio, video, and image investigations for criminal and civil cases in the United States and abroad. Allen provides forensic audio and video training to top law enforcement agencies,

foreign governments, and public and private sector forensic specialists from all over the world. Allen also serves as a technical assessor for the American Association for Laboratory Accreditation, has provided consultation to several media outlets, and is an active member of multiple professional industry organizations.

Forensic Audio Enhancement Basics W 4 hours

An introduction to basic audio concepts and terms leading to an understanding of fundamental audio techniques to correct audio issues. Such issues as equalization, compression and noise reduction all from a forensic perspective. The iZotope RX software will be demonstrated which students will use for hands-on practicals. Students will be directed to download demo versions to Mac or PC.

Presenter: Alan Combs (See above Advanced Forensic Audio Techniques)

Forensic Multimedia Evidence Note Taking L 90 Minutes

Learn or reinforce the importance of good note taking skills and how to take notes for multimedia forensic examinations. See how to make note templates within Microsoft Word. Once understood, the ability to peer review ones work will become much simpler. This presentation will show the benefits of why taking the time to write in-depth detailed notes will make writing a scientific analytical report much more easier and faster.

Presenters: Bradley Barkhurst is a LEVA Certified Forensic Video Analyst and, since 2016, a Forensic Specialist Supervisor with the Ohio Division of State Fire Marshal Forensic Laboratory. Prior, he worked for ten years as a forensic video analyst with the Ohio Organized Crime Investigations Commission. He holds a BFA in electronic media from the University of Cincinnati. He is currently pursuing a Master of Science degree from the University College of Dublin, Ireland Centre for Cybersecurity and Cybercrime Investigation and expects to graduate in 2020. In 2020, he obtained a forensic video examiner certification with the International Association of Identification. Bradley is a LEVA Board member and an active member in IAI, HTCIA and MORPCA.

Chad Wissinger holds a Bachelor of Science in Forensic Chemistry from Ohio University and a MBA from Capital University. Chad began his forensic career as a Chemist with the Ohio Division of State Fire Marshal Forensic Lab. He later continued as an explosives contractor until he became Chief of the Lab in November 2009. In addition to his management duties, he conducts mobile device examinations and is currently pursuing a Bachelor's Degree in Computer Forensics and Digital Investigations through Champaign College.

***Harness the Power of the All-New Impress Generation L 90 minutes**

An introduction to the brand new generation of Impress, an image and video enhancement software tool. During this presentation, different use cases will be explained showing the workflow and some of the more advanced tools and operations.

Presenter: Henk-Jan Lamfers is the co-founder of Foclar which translates advanced scientific methods and algorithms, for the enhancement and analysis of images and videos, to intuitive software applications custom made for law-enforcement. Henk-Jan has been a software engineer for 20 years and focuses on research and development along with training. He has a MSc in Applied Physics and PhD in Solid State Chemistry.

Shots Fired: When A Picture Is NOT Worth A Thousand Words! L 90 Minutes

The session will explore three shootings incidents to include an officer involved shooting, a possible accidental discharge and a homicide investigation. In each case, the questions asked (who shot first, did the officer discharge the service weapon and was the phone recording authentic) could not be answered with the video or audio streams alone. Even though a "picture is worth a thousand words," often in firearms incidents the audio stream can be your most valuable piece of evidence. To properly conduct an examination, one must understand the relationship between the video and audio streams and the fact that "synced" is not what is often seems. The presentation will explore answers to questions like: Can a "gunshot" be identified from an audio track? Can the weapon type, caliber, etc. be determined? Is muzzle flash always recorded? And, what is the relationship between the video and audio track as it relates to gunshots? The subtitle of this class is really 'everything the presenter has learned in the past 3 years responding to over 2 dozen officer involved shootings and countless gun related homicides'.

Presenter: Sergeant Christopher Andreacola is a LEVA Certified Forensic Video Technician and has been with the Tucson Police Department in Arizona for thirty-three years. He became an instructor in Mobile Video Recording for Law Enforcement in the 1990's. Familiar ground as his major at the University of Arizona was General Fine Arts /

Cinematography where he studied film, video and photography. He began conducting forensic video analysis for the Department in 2013. In 2018, he formed the department's first Video Analysis and Management Unit. He currently teaches around the country on Body Worn and In-car Cameras.

***Social Media Challenges Facing DME Processing L 90 Minutes**

Social media and other video files not stored on a local device (i.e., DVR, cell phone computer) are becoming more prevalent in today's investigations and present unique challenges in their acquisition, processing, authentication and introduction in court. Discuss methodologies and best practices for acquiring, evaluating and authenticating social media and cloud stored video for introduction and use in legal proceedings. Specific topics will include how to download/obtain social media and cloud-stored video, recognizing the "best" video file available, and rules for authentication.

Presenters: Brandon Epstein and Bertram Lyons (See above Designed To Conceal) and Robert J. Peters is the Senior Attorney of the Zero Abuse Project, where he develops and delivers state-of-the-art training and comprehensive technical assistance to prosecutors and child abuse multidisciplinary team members on crimes against children. Previously, Robert worked as a prosecutor and as the Senior Cyber and Economic Crime Attorney & General Counsel with the National White Collar Crime Center (NW3C), where he provided subject matter expertise on topics related to technology-facilitated child exploitation and acted as lead instructor for NW3C's Judges & Prosecutors courses. Mr. Peters is also the founder and Chairman of the SHIELD Task Force, a 501(c)(3) nonprofit that partners with Child Advocacy Centers and local stakeholders to encourage reporting of sexual abuse and online safety.

***Truth in Video Files: Introducing A Novel Approach To Video Source Identification/Authentication L 90 Mins.**

Emerging research has developed an additional methodology for the forensic examination of digital video files, allowing for new insights into their origin and authenticity. Get an overview of digital video file structure and how its analysis can identify the source of a digital video file as well as evaluate authenticity, even without key file metadata. See this methodology's outcomes in a preview of Medex, an emergent tool for video file source and authenticity analysis.

Presenters: Brandon Epstein and Bertram Lyons (See above Designed To Conceal)

The Video Narrative: Harness the Power of Condensed Videos for Suspect Identification W 90 Minutes

Once investigators have completed the sometimes troublesome tasks of video evidence recovery and footage playback, how do organizations identify suspects? How many people actually view footage of the incident instead of some still images on a bulletin? Attendees will learn how Police Agencies are using condensed videos on internal and external platforms (Social Media, YouTube), for suspect identification, sometimes with amazing results. Nothing can get a case charged faster than watching one single, continuous video of the entire event. Leave behind the days of hunting through a folder full of video files, or using the progress bar to find the correct start time. The trier of fact will also appreciate the condensed, relevant evidence. A section will include hands-on instruction using downloaded media files and a trial of the commercial software Camtasia. Students will learn how to produce videos like those here : <https://www.youtube.com/playlist?list=PLni-cuMjWzIDGyQVRTKpeNxoneAVf64eF>

Presenter: Michael Chiocca is a LEVA Certified Forensic Video Technician and President of Midwest Forensic Consultants. He holds a Master's Degree in Public Safety Administration as well as numerous Federal, State, and vendor-specific certifications, including a basic and in-service certified law enforcement instructor from the State of Illinois . Serving in Law Enforcement since 1990, he has been a key contributor in major, nationally known criminal investigations. His innovations has provided technological solutions for investigations for a major city police agency, providing them transformational change. He has also spoken nationally on the use of video surveillance technology in criminal investigations. His work with digital evidence won him numerous awards that include both the Cook County Crime Stoppers and Chicago Crime Commission Excellence in Law Enforcement awards.