

LEVA 2019 SESSION DESCRIPTIONS

In Alphabetical Order #Indicates you must have pre-registered for a seat

* Indicates presentation by an exhibitor

3D Laser Scanning Reverse Projection*

Significant advances in 3D laser scanning technology provide forensic video analysts and technicians with the ability to integrate original video recordings into 3D point cloud data. 3D laser scanning technology can be leveraged to calculate suspect height measurements, vehicle speed calculations, and even provide 3D visual perspectives of individuals recorded to CCTV. Attendees will learn about recent advances in the Reverse Projection methodology, and get hands-on experience conducting an investigation within iINPUT-ACE's new "Camera Match Overlay Tool"

Presenter: Andrew is a certified Forensic Video Analyst and the Technical Director for iINPUT-ACE. As a forensic video analyst, Andrew has been qualified as an expert and testified in various courts in the USA and Canada. Andrew 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.

A Statistical Examination Of DVR Video Data Storage Efficiency*

The filesystem of a DVR must balance between speed, efficiency, and organization while recording video. Sometimes there is a substantial amount of overhead involved. How much hard drive space is actually being used to store footage? This study aims to examine a variety of DVRs to provide answers with a statistical basis.

Presenter: Bart Wolczyk, DME Forensics Senior Technology Engineer

A Statistical Examination Of The Temporal Discrepancies In DVR Recordings*

DVRs are typically suitable for measuring time periods of minutes or even a few seconds, but are they accurate enough to measure to sub-second accuracy? There are two potential sources for error; the input from the camera and output to the drive. There are strong reasons to believe that cameras themselves do not introduce significant error, but the suggestion that DVRs do not is largely anecdotal. This study aims to examine a variety of DVRs, isolated from cameras, to provide an answer with a statistical basis.

Presenter: Tim Bate, DME Forensics Technology Manager

A Survival Forum: *Disturbing Images: Processing What You Cannot Delete*

Hear from LEVA members who volunteered to share their struggle. It could very well be yours too.

Within the law enforcement and digital forensics community, people will say, "What do they expect? It's part of the job – they should be able to handle it." However, technology has changed the type of evidence that is now processed in criminal cases – we now have more audio, video, and image evidence of the actual crime itself than ever before. And in some cases, multimedia analysts need to clarify audio/video/image evidence in order to identify the actors or the context of the situation, or an examiner may need to compare/analyze clothing, tattoos, or individuals, which may involve viewing or hearing the heinous acts (e.g., homicide, child sex abuse, torture).

This presentation will discuss the psychological well-being (e.g., depression, secondary traumatic stress) of digital and multimedia forensic analysts exposed to disturbing media. The key takeaway – research shows the job is having a significant effect on your mental health, and it's time we started a conversation about it.

Presenter: Dr. Kathryn Seigfried-Spellar is an Assistant Professor in the Department of Computer and Information Technology (CIT) at Purdue University. Dr. Seigfried-Spellar studies the intersection between the behavioral sciences and technology-facilitated crime and digital forensics. Her most recent work focuses on the psychological wellbeing and job satisfaction of digital forensic examiners and multimedia analysts exposed to

disturbing media. Dr. Seigfried-Spellar is a Fellow of the Digital and Multimedia Sciences section of the American Academy of Forensic Sciences (AAFS), member of the International Association of Law Enforcement Intelligence Analysts (IALEIA), and a member the American Psychological Association (APA). She is also a deputized Special Investigator (Tippecanoe Prosecutor's Office) and member of the Tippecanoe High Tech Crime Unit (HTCU).

Application Of Image And Video Enhancement And Analysis In Forensics*

Discover enhancement and analysis options available in the Foclar software suite. Recognize opportunities to apply solutions in real casework. Learn to have realistic expectations on an application.

Presenter: Henk-Jan Lamfers is the 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 in the industry for nearly 20 years and focuses on research and development along with training. He has a MSc in Applied Physics and PhD in Solid State Chemistry.

Authenticate: The Beginners Guide to Image Authentication*

Image authentication techniques have multiplied over recent years. The simplicity of Image editing and the increase of bogus imagery, “Deep Fakes”, being identified in the media has, quite rightly, meant that methods to detect manipulation must be available to the legal system.

This workshop leads on from the current LEVA Level 2 module on Image Authentication. Attendance will give you insight into the difference between the terms ‘Authentic Image’ and ‘Camera Original’. You will learn the workflows for when dealing with single Images, many images and having possession of a suspect camera.

Amped Authenticate will be used to show how easy it is to review, analyze and compare images to detect the subtle differences and identify manipulations that could go undetected.

Presenter: David 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.

Beyond Daubert: Defending Against Recent Challenges to LEVA’s Training Program

A judge's ruling has caused some challenges for experts testifying in the field of Forensic Video Analysis. Recently, LEVA certified forensic video analyst Andrew Fredericks (bio above) took the stand on a homicide trial in Alberta, Canada. The defense in this recent matter filed a 35 page motion to exclude the video evidence based on the past ruling - causing Fredericks to be on the stand for 4 full days of testimony. In this presentation, Andrew will detail his experience on the stand and provide attendees with a critical transcript of the judge’s ruling. Learn how to assist the court and protect your evidence if a similar ruling is filed against you.

Courtroom Testimony For Expert Witnesses

Must have pre-registered.

An expert witness is a person with expertise in a particular field that exceeds the knowledge level of the trier of fact and who applies that expertise in a legal setting. It is essential that a forensic expert be able to communicate that vital information in an effective and compelling manner so as to maximize its value. The ability to do that is rarely innate and is something that can be learned and practiced. This course is designed to teach experts how to become effective expert witnesses.

Presenter: Jonathan Hak, Q.C. is a major crimes prosecutor for the Alberta Crown Prosecution Service in Calgary, Alberta, a position he has held for almost 30 years. He has extensive experience prosecuting major

crimes and specializes in legal issues involving expert witnesses and teaching law in the U.S., Canada and the United Kingdom.

Creating An Investigative Animation: Clarity Out of Chaos

On February 14, 2018, a gunman opened fire at Marjory Stoneman Douglas High School in Parkland, Florida, killing seventeen students and staff members and injuring seventeen others. As part of the investigation, Angela Ellis of the Pinellas County Sheriff's Office was tasked with creating an animation from various sources (school surveillance, Body Cam footage, 911 calls, police comms, interviews) and piece all the moving parts together. The result: A powerful real time multimedia visual overview of the events as they unfolded on that tragic day.

Presenters: Angela Ellis is a LEVA certified Forensic Video Technician working towards Analyst certification. Prior to her employment as a Media Forensic Specialist with Florida's Pinellas County Sheriff's Office, Angela was a national broadcast commercial editor for seven years and a film and video content editor.

Jody Soutullo is a LEVA certified Forensic Video Technician. He's been with the Pinellas County Sheriff's Office for 24 years and is a Media Forensic Specialist. He has worked assignments in the Electronic Support Unit, the Technical Operations Unit and the Narcotics Division. He holds a BFA from the Film School at Florida State University.

Digital Multimedia Evidence and the Organization of Scientific Area Committees (OSAC)

This presentation will provide an overview of the Organization of Scientific Area Committees (OSAC) and its interaction with the digital and multimedia forensic community. For instance, interaction between the OSAC and Standards Development Organizations (SDO), such as the American Society for Testing and Materials (ASTM). The Facial Identification (FI) Subcommittee and the Video/Imaging Technology and Analysis (VITAL) Subcommittee will provide discipline specific updates on their current activities and documents. The FI update will include information on the standards, guidelines, and best practices that they have been working on independently and in conjunction with the Facial Identification Scientific Working Group (FISWG). Additionally, some insight will be provided into what the OSAC FI Subcommittee and FISWG have on their roadmaps for future standards, guidelines, and best practices. The VITAL Subcommittee focuses on standards and guidelines related to the application of methods and technologies to analyze information related to forensic imagery from a variety of systems. The VITAL update will highlight standards currently being developed and upcoming projects that are applicable to Video Analysis, Image Analysis and Forensic Photography.

Presenter: Christina Malone is a Digital Evidence Examiner at the Defense Forensic Science Center, U.S. Army Criminal Investigation Laboratory, where she has worked for ten years. Her duties here include evidence photography, image analysis, and 3D crime scene documentation. Christina earned a Master's of Science degree in Forensic Science from Michigan State University in 2008, and she holds a Bachelor of Health Science and a Bachelor of Arts from University of Miami. Christina is the Executive Secretary of the OSAC Subcommittee on Video Imaging Technology and Analysis (VITAL) and member of the Scientific Working Group on Digital Evidence. Lora Sims, Ideal Innovations, Inc., Facial Identification Subcommittee Chair, will be co-presenting.

FFmpeg for Validation and Analysis*

Many tools currently use FFmpeg for conversion of video, and the data contained within video frames and streams. This session will show the how" the videos look behind the proprietary wrapper, and how to get playable videos, as well as troubleshoot and validate the information they get from tools. Learn how to convert a proprietary video into a standard wrapper and how to create a sub-clip of a video and convert it, if needed.

Presenter: Blake Sawyer is Video Chair of SWGDE and LEVA certified Forensic Video Analyst. Previously with the Plano, TX police department, Blake is now employed by Amped Software.

Forensic Video Applications: From Acquisition to Prosecution

An opportunity to discover effective and efficient methods to perform FVA by creating a standardized workflow and deliverables. Actual cases will be discussed.

Presenter: Edward Baker is a LEVA Certified Forensic Video Analyst and retired Police Detective with over 27 years of law enforcement and criminal investigations experience. He has vast experience in forensic video analysis, case investigation, courtroom presentation in forensic video evidence, DVR recovery and is one of LEVA's core instruction team members of Levels 1 and 2 courses.

Forensic Audio Analysis: Introduction

This session will provide an overview of basic principles to consider when working with problem audio and audio from video recordings with hands-on demonstrations of programs for use in speech clarification. Real case examples will be used to give a clear idea of the tools and techniques available.

Bring headphones and a PC or Mac laptop with Audacity (free software) and iZotope RX7 (free download running in demo mode). **Install by Wednesday, October 9.** Audacity can be downloaded at <https://www.audacityteam.org/download/> and RX7 at <https://account.izotope.com/support/download/rx-7-advanced>

Presenter: David Hallimore is a retired Houston Police Sergeant. He spent over 19 years in HPD's Forensic Audio/Video Unit where he worked on thousands of cases involving audio and video. David is an active member of the Digital & Multimedia Evidence Subcommittee of ASTM International, the Audio Engineering Society, and is an Associate Member of the Digital & Multimedia Sciences Section of the American Academy of Forensic Sciences. He is the Outreach Chair of the Scientific Working Group on Digital Evidence and also serves on the Audio Committee at SWGDE. David serves on the Digital Evidence Subcommittee of the NIST Organization of Scientific Area Committees (OSAC) where he serves as Chair of the Audio Forensics Task Group. David has given expert testimony in civil and criminal trials in both Federal and State courts.

Forensic Audio Analysis: Intermediate

Audio analysis using iZotope RX. Real-world examples of noisy audio recordings and the steps to clarify them using some of the advanced filters contained in iZotope RX 7 Advanced. Hands-on exercises will be used to give students practice in developing a workflow for clarifying speech in problem audio recordings.

Bring headphones and a PC or Mac laptop with iZotope RX7 (free download running in demo mode). **Install by Wednesday, October 9.** RX7 can be downloaded at <https://account.izotope.com/support/download/rx-7-advanced>

Presenters: David Hallimore and John Welsh (See Forensic Audio Analysis: An Introduction)

Game On!

Back for its 4th season! Patterned after popular game show formats, teams and individuals will again answer questions regarding forensic video analysis leading up to prizes including free tuition to LEVA's 2020 training symposium in San Diego, CA! Are you game?

Presenters: Roger Cain is a LEVA Certified Forensic Video Analyst and LEVA's Certification Program Manager assigned to the Rocky Mountain Information Network (RMIN) in Phoenix.

Roy Dunkelbarger is a LEVA Certified Forensic Video Analyst assigned to the Rocky Mountain Information Network (RMIN) in Phoenix and on LEVA's Certification Committee.

Hands-On Case Management with iNPUT-ACE*

A recent update to iNPUT-ACE added functionality to tag valuable metadata to items in the File List. In this 2 hour hands-on workshop, attendees will learn how to leverage this feature to manage a real case with large amounts of video data. Whether you are a current iNPUT-ACE user, or will be using it for the first time - this workshop is a great resource to get hands-on experience and learn how to use this tool to manage a thorough video investigation.

Presenter: Andrew Fredericks (see above bio 3D Laser Scanning Reverse Projection)

Imaging the Unseen with Digital UV, VIS, and IR Technology

Preliminary Bruising, Tattoo, and Video Studies...where seeing can be deceiving. Expect to learn about the electromagnetic spectrum and its relevance to ultraviolet (UV), visible (VIS), and infrared (IR) digital photography, videography, and analysis. While the investigative potential has been made clear for the a wide variety of evidence, the full extent of such similar effects on persons of interest and their clothing and vehicles (often captured on surveillance video) has yet to be fully realized and understood by many law enforcement professionals, frequently resulting in the investigation and release of inaccurate BOLOs. The presenter's preliminary research results on various bruising, clothing, hair/skin tones, vehicles, and tattoos visualized with different digital UV, VIS, and IR dSLRs and/or IP security cameras, camera filters, and wavelengths of light will be highlighted. In addition, attendees will have the opportunity to visualize various items with select camera, filter, and light source combinations in order to observe said effects in real-time.

Presenter: Stephanie L. Hoffman is an IAI Board Certified Crime Scene Investigator who received her M.S. and B.S. in Forensic Sciences with Minors in Chemistry, Criminology, and Criminal Justice from Chaminade University of Honolulu. She has held multiple forensic science positions and garnered a wealth of professional experiences. Her areas of expertise include forensic photography, crime scene/death investigation, fingerprint recovery and analysis, and bloodstain pattern analysis. To date she has also developed and/or taught multiple sections of twenty-three different forensic science courses at the collegiate level and advised six student research projects.

Legal Update

Stay current! Recent trends in the use of video evidence in court. Challenges to image comparison evidence - a discussion of the UK proposal. Recent case law on select topics.

Presenter: Jonathan Hak is LEVA's principal legal instructor with over 30 years' experience as a major crimes prosecutor for the Alberta Crown Prosecution Service in Calgary, Alberta. He has widespread experience prosecuting major crimes and specializes in legal issues involving expert witnesses. He also has extensive experience teaching law in the United States, Canada and the United Kingdom.

LEVA Mentoring: Shaping the NEXTGEN of Forensic Video Analysts

Presentation by LEVA's Certification Committee on the requirements and guidelines of being a LEVA Mentor. Learn the tools and resources on how to be a positive and productive influence effectively guiding candidates to succeed in becoming a LEVA Certified Forensic Video Analyst. Designed for current or perspective CFVA Mentors.

Previewing Mobile Device & Storage Media – Performing Effective Onsite Triage*

You've arrived on-scene and during the course of the search you locate one or more mobile devices...now what? Perhaps you're on a knock-and-talk and the target of your investigation gives consent to preview his mobile devices...now what? Mobile technology has developed at an unprecedented rate. Likewise, mobile device applications have developed at warp speed to keep in step with the rising demand for improved functionality and storage capability. The good news is the evidence you are looking for is probably on the

device. The bad news is that you may have a small window of opportunity to find the data you need. The sheer volume of video and other data present on today's mobile devices has become an impediment to on-site investigative efficiency.

This presentation will focus on best practices for conducting effective on-site previews and triage of mobile devices and removable storage in the field. Attendees will learn how utilities built within Cellebrite Physical Analyzer, such as file hashing, filtering, metadata analysis and advanced search functionality can be leveraged to examine mobile devices and external storage media to develop probable cause and/or locate video evidence specifically related to the investigation.

Presenter: Jim Dibble serves as Manager of Investigative Training for Cellebrite and brings more than 36 years of experience in federal and state law enforcement. He retired from the US Army Criminal Investigation Command after twenty years of service and recently retired from the Washington State Gambling Commission after 23 years of service as a Senior Special Agent and Digital Forensic Examiner. Jim and has more than 16 years of experience in digital forensics, holds numerous forensic certifications, including the CCO, CCPA, CASA, CCME, CFCE certifications, and was recently recognized as a Cellebrite Certified Master Instructor (CCMI). He formerly served the International Association of Computer Investigative Specialists (IACIS) as Director of Certification, Vice President, President and member of the Board of Directors. Jim is an Associate Member of the American Academy of Forensic Science (AAFS) in the Digital and Multimedia Section and currently serves on the Forensic Specialties Accreditation Board (FSAB) as a Director.

SWGDE: What's New and What You Should Know*

Learn about the latest documents created and being prepared by the Scientific Working Group on Digital Technology. These documents have a significant impact on those processing DME do. Also, hear how you can help contribute to future document creation that could benefit the entire community.

Presenter: Blake Sawyer is Video Chair of SWGDE and LEVA certified Forensic Video Analyst. Previously with the Plano, TX police department, Blake is now employed by Amped Software.

Why I-Frames? A Proof That P-Frames Are Often More Valuable*

Extracting I-frames for the purpose of Frame Averaging can be a simple one-button process, but why should we remove all of the Pframes? Is it possible that some of those P-frames are better than the I-frames we are looking at? This presentation first covers a technical overview of how I-frames and P-frames are compressed spatially. Then, a new patent-pending technique will be revealed for improving the quality of frame averaging. Come see the latest in enhancement technology!

Presenter: Andrew Fredericks (see above bio 3D Laser Scanning Reverse Projection)

Workflow Workshop with Amped FIVE*

Back by popular demand! This workshop is suitable to new and regular users of Amped FIVE

Amped FIVE gives users unparalleled power and flexibility when dealing with video evidence.

Decoding, interpreting, analyzing, reviewing, restoring, enhancing, annotating, converting, presenting...all within a single, easy to use interface.

Learning workflows to maximize your time, this practical workshop will utilize many different files and case examples to ensure attendees gain maximum benefit out of the software.

Presenter: David Spreadborough (see Authenticate session)