

LEVA 2018 SESSION DESCRIPTIONS

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

3D Laser Scanning Reverse Projection: Integrating Video Evidence with 3D Point Cloud Data

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 this powerful technology and understand techniques to get the most out of their video evidence.

Presenter: Andrew Fredericks is a LEVA certified Forensic Video Analyst who specializes in 3D laser scanning reverse projection, video workflow automation, and decoding proprietary video file formats. As the Project Manager for iINPUT-ACE, Andrew directs the development, training, and support for this powerful workflow engine. In addition, Andrew conducts forensic video/3D analysis throughout North America and abroad and provides training to law enforcement on forensic video analysis methodologies and techniques.

A Hands-On Walkthrough of a Real Major Crimes Investigation Using iINPUT-ACE

Whether you have been using iINPUT-ACE in your daily workflow, or are just curious about its latest features – this workshop is for you. Attendees will work hands-on with the iINPUT-ACE FVA workflow engine to leverage the latest features to build a comprehensive analysis of a real-world major crimes investigation. Attendees will also receive a special give-away for attending this workshop. Seats are limited, so advanced signup is required.

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

Courtroom Testimony For Expert Witnesses

This highly rated three-day course is dynamic and combines lectures, demonstration and moot court practice. It is specifically designed for experts (and experts-in-training) in **ANY** area of expertise.

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. Becoming an expert witness in any field is a significant accomplishment.

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.

Specific examples and moot court practice focuses on the areas of expertise represented by course participants.

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. He holds a Diploma in Criminal Justice from Mount Royal University in Calgary, Alberta; a Bachelor of Science Degree (with distinction) in Criminal Justice from California State University; a Bachelor of Laws Degree from the University of British Columbia in Vancouver, B.C.; and a Master of Laws Degree from Cambridge University in England. He was appointed Queen's Counsel in 2006.

Developing SOPs for Forensic Video Analysts

Standard Operating Procedures play a crucial part of working in forensics. Learn the difference between Policy, Procedures, and what we in the private sector call "Playbooks". Also, learn how software can organize and bring your workflow into the 21st century. Learn writing hacks and reporting hacks, work smarter not harder! Forget cutting and pasting things from other departments. Finally something that will just work!

Presenter: Keith Swanson is a LEVA Certified Forensic Video Analyst and currently the Manager of Incident Response with American Express Global Business Travel, Global Cyber Security. Previously, he was a Forensic Examiner for the Rocky Mountain Information Network and the Manager of Cyber Investigations for CVS Health. Keith retired a Detective after 22 years with the Scottsdale Police Department. He is a Certified Information Security Specialist, and GIAC Certified Information Security Professional. Keith holds certifications as an Access Data Examiner, Cellebrite Mobile Examiner, IAI Forensic Video Examiner and in Mobile Phone Seizures. He holds a Master's Degree in Information Management, B.S. in Sociology and Associate of Science in Law Enforcement Technology.

Digital Evidence Dilemma: The Absence of Model Policies and Solid Metrics

Digital evidence continues to constitute both a great asset and numerous challenges for public safety; not only Cybercrime but as tool or evidence of almost any crime. The speed of change of relevant technologies, the diversity of digital format, the distributed nature, the complexity for accessing, and resulting range of quality management issues have made this arena not one for the tech faint of heart.

To both compound and focus this phenomenon, digital image, audio and video evidence are clearly front runners in terms of both volume and relevance. Additionally, real time human review and handling has become increasingly impractical demanding tools and efficiencies which add to the complexities above. In the absence of model policies and solid metrics, best practices are critical; sharing and near real time collaboration among public safety experts is necessary for efficacy of technical and legal outcomes.

This discussion will dive into this matter to provide you with the challenges and the state of best practices.

Presenter: Jim Emerson is Chairman of the International Association of Chiefs of Police Computer Crime and Digital Evidence Committee. His law enforcement and security background spans over 39 years with a focus on cybercrime investigation, computer forensics, and related criminal intelligence over the past 14 years. He recently Chaired the IJIS Institute Safeguarding Data Task Force, and Co-Chaired the IJIS Institute Digital Integrity Task Force, was a member of the DOJ/BJA Global/CICC Task Team on Cyber Safety for Law Enforcement, and currently participates in the ICANN Public Safety Working Group of the Government Advisory Committee.

Eye of the Storm: Examining the Issue of Privacy in Video Surveillance Governance

As surveillance technology advances many in the public are becoming more concerned about the impact on civil liberties and privacy expectation. Courts and legislatures in the US and across the globe are reacting to the emerging technology with various approaches to address. Some approaches like the General Data Protection Regulation in the European Union are comprehensive regulatory approaches. In the US there is a hodgepodge of legislative and judicial solutions. Recently the US Supreme Court has addressed the use of cell location and GPS tracking raise significant questions on privacy issues in public surveillance. That guidance has implications for use of other digital surveillance tools like video. Particularly surveillance practices that involve the collection and analysis of large amounts of digital information. This session will discuss privacy considerations for government video usage and tools for assessing and developing policy. There will also be a discussion of how technology can be part of the solution in creating and implementing governance strategies to managed surveillance systems consistent with law, regulation and public expectations.

Presenter: Don Zoufal is a Safety and Security Expert with his own practice at CrowZnest Consulting, Inc. He lectures in technology for homeland security in the Masters in Threat and Response Management at the University of Chicago. Don has held several high level legal and operational public safety posts including: Deputy Commissioner for Safety and Security for the City of Chicago's Aviation Department (O'Hare and Midway International Airports); First Deputy for the City of Chicago's Office of Emergency Management and Communications (Managing Citywide Homeland Security Programs); General Counsel for the Chicago Police Department and Chief Legal Counsel for the Illinois Department of Corrections. He currently serves as Legal Adviser to the Illinois Association of Chiefs of Police. He holds three degrees from the University of Illinois in law (J.D.), public administration (M.A.P.A.), and history and political science (B.A.). In 2008 he received an M.A. in Security Studies focusing on Homeland Security from the U.S. Department of Homeland Security sponsored program through the Center for Homeland Defense and Security in Monterey, CA. He is also an ASIS Certified Protection Professional and a retired Colonel in the U.S. Army Reserve.

Embedding Video Content in Dynamic PDF Reports: Techniques, Strategies and Case Studies

Forensic Video Analysis is a visual science and reports that directly integrate that visual data can provide significant value for examiners and prosecutors alike. Demonstrated will be simple methods to produce dynamic and compelling PDF reports that leverage the visual aspect of FVA with directly imbedded video and image content.

Presenter: Andrew Fredericks (See 3D Laser Scanning above)

Fabrication & Authentication

Digital Video is ubiquitous and is almost universally compressed using lossy encoding methods. Recompression via transcoding creates challenges for Forensic Video Analysts attempting to validate visual evidence. Transcoding typically occurs when copying original video, after an editing process, or when being uploaded to another device or website. Forensic analysis reveals details of the final compression step, often masking the original data. This session explores how to expose recompression, how to identify the original compression method, and how to discover what likely changed in-between. Through recent cases studies, attendees will also examine methods used to detect and expose how attorneys and experts have attempted to fabricate video evidence.

Presenters: Chris Russ is owner of Reindeer Graphics specializing in custom image processing and analysis software development. For nine years he was senior forensic scientist with Ocean Systems. Chris is very active in the Apple and Adobe product communities. He holds a B.S. degree in Computer Science.

Grant Fredericks is a LEVA Certified Forensic Video Analyst widely recognized as one of the most experienced video experts in North America. He is a contract instructor of video sciences at the FBI National Academy and has testified as an expert witness over 200 times in courts at all levels. Grant is considered a leading instructor in Photographic/Video Comparison, Reverse Projection and Vehicle Speed Analysis. He is the principal architect of LEVA's four core forensic video courses and two certification programs.

Finding the Needle: Tools for Promoting Better Video Quality and Analytics for Use

As the availability of video data grows and expands, finding the right video data with usable images that meet operational requirements is a growing concern. How can operators of video programs better ensure the quality of video from their systems? How can they use tools to enhance their ability to find relevant video for their operational purposes. Some solutions are offered by the Video Quality in Public Safety (VQiPS) program. VQiPS is a cooperative public-private, federal, state and local initiative designed to develop and promote knowledge products to assist in achieving better video. The program is also sponsoring a similar group looking at the issue of video analytics. This session looks at VQiPS solutions and offers a case study and demonstration of how video analytics can help the find the needle of a video image in the haystack of digital data.

Presenter: Don Zoufal (See Eye of the Storm above)

Fundamentals of Audio Clarification

Are you the "go to" person at your agency for video evidence but don't know where to start with audio? 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 RX6 (free download running in demo mode) installed. Audacity can be downloaded at <https://www.audacityteam.org/download/> and RX6 at <https://www.izotope.com/en/support/product-downloads/rx-6-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 over 30 civil and criminal trials in both Federal and State courts.

Game On!

Back for its third season! **BUT**...with new twists! 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 2019 training symposium in Denver, Colorado! 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.

Getting Around the Block

Bring your laptop! One of the worst things is working for hours on a video, getting everything done, and then the prosecutor calls and says "it won't play". In this class, you will learn why IT hates video codecs and why machines are locked down. Then we will teach you methods to work with the IT department to get the right codecs to the right people. Finally, we will learn how to create a virtual machine, one where codecs can be loaded and saved and then handed out with your work.

Presenter: Keith Swanson (See Developing SOPs above)

Getting it Right: Why the Court Needs Video Experts

"I want the truth!" Tom Cruise's character in "A Few Good Men" echoed what should be the goal in all criminal proceedings – the ascertainment of the truth. Judges and juries need expert assistance in order to fully understand what conclusions can fairly be drawn from video evidence. Properly trained and competent forensic video technicians and analysts are uniquely suited to provide this much needed information. In this session, we will explore how expert witnesses can and must assist the court in making informed decisions about authentication of video images, what to make of social media images, reduced frame rate video, compression, comparison evidence, resolution and other issues. 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. Learn how to effectively assist the court in making the correct decisions about video evidence.

Presenter: Jonathan Hak, Q.C. (See Courtroom Testimony for Expert Witnesses above)

One Tool...Amped FIVE...Countless Possibilities!

Over the last few years FIVE has fast become an indispensable weapon in the FVA arsenal. It doesn't matter if you are a daily user, or have never at all; if you're interested in the latest developments on decoding, workflow, restoration, enhancement, comparison and presentation - this workshop is for you! See how using FIVE can expedite your investigations, using a scientific methodology to get results - fast!

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.

Peer Review Process: What Could Possibly Go Wrong?

Ever have the opportunity to perform a technical peer review but didn't know where to start or how far to go? Ever been a recipient of a technical peer review and you didn't get what you expected or needed? This class will go over the ins and outs of the peer review process, with an in-depth look of what a technical peer review is, how the peer review itself should be properly documented, what is to be disclosed, and how attorneys may use the review process. For those pursuing LEVA Analyst certification, we will also review the difference between technical and analytical scientific report writing and what to expect from your mentor in preparing you for certification.

Presenters: Jonathan Hak, LEVA Certification Program Manager Roger Cain and current Certification Assessment Committee members: JJ Ruano, Roy Dunkelbarger and Gerry Lanna.

Sample Size Calculation for Forensic Multimedia Analysis: the quantitative foundations of experimental science

The 2009 National Academy of Sciences report, Strengthening Forensic Science in the United States – A Path Forward, outlined specific structural deficits in the practice of forensic science in the US. A few years later, the Organization of Scientific Area Committees on Forensic Science (OSAC) was created within the US Department of Commerce (NIST) to address the issues raised and to publish standards in all of the recognized disciplines. Forensic Multimedia Analysis falls within the scope of the Digital / Multimedia Area Committee. In harmonizing practices across the comparative sciences, it has been recommended that all involved in the work have some familiarity with quantitative analysis and experimental science. This is evidenced in a recent Arizona Supreme Court case, *Az. v Romero*.

Attendees will learn the basics of experimental science and quantitative analysis as well as a detailed information on the calculation of the sample sizes necessary for many analytical experiments. The quantitative underpinnings of "blind" image authentication, forensic photographic comparison, and speed calculations from DME evidence will be presented and explored.

Presenter: Jim Hoerricks is the Director of Customer Support and Training (North America) at Amped Software, Inc. Previously, he was the Senior Forensic Multimedia Analyst for the Los Angeles Police Department where he cofounded its forensic multimedia laboratory in 2002. Jim is the author of "Forensic Photoshop", and co-author of Best Practices for the Retrieval of Video Evidence from Digital CCTV Systems. He serves on the Organization of Scientific Area Committees for Forensic Science's (OSAC) Video/Imaging Technology and Analysis (VITAL) subcommittee as the Video Task Group Chair. He holds a Ph.D in Education, M.A. in Organizational Leadership, B.A. in Organizational Leadership (Magna Cum Laude) and Associate of Science degrees.

Understanding Tool Validation Pertaining To Video Forensics: Was *That* Supposed To Happen?

Tool validation is an important function within any forensic video workflow. This panel presentation will discuss tool validation from a number of perspectives including a single person lab, an accredited lab, and laboratory supervision as well as from the National Institute of Standards and Technology (NIST). Resources such as the NIST Computer Forensic Tool Testing (CFTT) Program and Federated Testing project will be discussed as to how it can fit within the forensic video discipline.

Presenters:

Panel lead: Jim Lyle is currently the project leader for the Computer Forensic Tool Testing project and the Computer Forensic Reference Data Sets project at the National Institute of Standards and Technology (NIST). He wrote his first FORTRAN program in 1968 and has been programming ever since. He holds a B.S. in Mathematics, M.S. in Mathematics, M.S. and PhD in Computer Science. Before joining NIST full time in 1993, Dr. Lyle was a Faculty Associate at NIST and an Assistant Professor at the University of Maryland.

Patricia Reiber, Forensic Scientist – Digital and Multimedia Evidence Section, Virginia Department of Forensic Science

Rachel Maloney, Digital and Multimedia Evidence Section Supervisor, Houston Forensic Science Center

*Christin Noebel, Forensic Digital Multimedia Analyst, Dallas County DA Office

* Participation pending

Vehicle Speed Calculations From Recorded Video

This session will introduce a real world case study of a vehicle speed calculation from a fatal motor vehicle crash. Specific methodology, including reverse projection, frame timing, margin of error, validity, and legal considerations will be discussed. An update and discussion on new research, best practices, and training will take place after the case study presentation.

Presenter: Brandon Epstein is a LEVA certified Forensic Video Analyst and Detective Sergeant with an urban New Jersey police department. He is currently assigned as the department's Digital and Multimedia Evidence Laboratory Director where he specializes in Forensic Video Analysis and Mobile Device Forensics.

Virtual Machines

Virtual machines allow you to run other operating systems within your current operating system – the operating systems will run as if they're just another program on your computer. You can also use virtual machines to run software on systems it wasn't designed for, or install codecs that mess with your machine. You can even share a virtual machine loaded with the codecs you need to make sure the "video just plays". Virtualization a powerful tool that can be leveraged to make your life easier. Learn to use free open source software to create a virtual machine. How to set up that virtual machine for your use, and for those who "can't get the video to play". How to share the virtual machine, and how to create an environment with multiple virtual machines.

Presenter: Keith Swanson (See Developing SOPs above)

Using Adobe Animate for Court: Making Evidence Come Alive

Students must bring a laptop with Animate, mouse, and power cable. Macs are acceptable but everything done will be set up for Windows. Bring your agency's logo or seal as a digital file in highest resolution possible.

The day before the class, students must install the demo version of Animate which stays active for seven days: <https://creative.adobe.com/products/download/animate>

Presenter: Paul Hartzell has served as a Digital Evidence Specialist/Graphic Artist/Multimedia Technician at the Hennepin County Attorney's Office in Minneapolis, MN since 2001. His duties focus on Forensic Video Analysis, Image Clarification, Audio Clarification, Graphic Arts, Exhibit Facilitation and Multimedia Services. Paul holds a M.A. degree in Communications and B.A. in Speech Communications (Radio & TV).

Video Evidence for Investigators

A laptop computer is strongly encouraged for participation. Designed for case detectives and investigators with little to no digital video training, this class will give insight into how digital video works and provide skills to assist in quickly and effectively using video footage as part of a successful criminal investigation. It will also introduce investigators to more advanced analysis/clarification methods and allow them to effectively communicate with forensic and technical personnel. Topics include digital video and courtroom admissibility, video playback and appearance, image enhancement and forensic video awareness, and special considerations for new technologies. Practical exercises will utilize many free and open source software that can be taken back to a student's agency and be put to immediate use.

Presenters: Brandon Epstein is a LEVA Certified Forensic Video Technician and ten-year veteran with the New Brunswick Police Department in New Jersey. He is a Sergeant to the Digital and Multimedia Evidence Laboratory within the Identification Bureau, Criminal Investigations Division specializing in Forensic Video Analysis and Mobile Device Forensics. Brandon serves on the Scientific Working Group for Digital Evidence (SWGDE).

Blake Sawyer is a LEVA certified Forensic Video Analyst with the Plano Police Department in Texas. He serves on the Scientific Working Group for Digital Evidence (SWGDE) and has received extensive training in DVR recovery and examination. Blake holds a Bachelor degree with a major in computer science.