2026 CBDIAI Educational Conference - Lecture Descriptions

The Invisible Injury; Vicarious Trauma Effects and Encouraging Ways to Cope
Keynote Speaker: Jan LeMay

It is understood that exposure to trauma commonly occurs in law enforcement and forensic investigation. Studies into the psychological effects of our careers reveal a shocking amount of vicarious trauma that we are all exposed to and the negative impacts on our mental health. This presentation will address some of those survey results, the speakers personal experience, and offer encouragement to address these challenges in healthy ways and in partnership with peers.

A Conversation About Stress and Beyond Survival (90 minutes)
Presenter: Casson Reynolds

This presentation includes talking about stress in our profession, our home life, and our personal inner struggles, and how we all need to truly understand ourselves to heal. The presentation is good for 1.5 to 2 hours and the goal is for everyone to walk away with a plan to handle the day-to-day triggers that lead to mental exhaustion and hypervigilance.

From the Crime Lab to the Field: Investigations at the Speed of AI (30 minutes)
Presenter: Carlos Casas

In this session, we will discuss the evolution ballistics analysis and how AI has accelerated and modernized criminal investigation by empowering field officers, investigators, and crime scene teams.

Ambush in Andrews (45 minutes)
Presenter: Daniel Mihalko

September 23th 2019 started off as a typical early Fall day in rural Andrews, South Carolina. At the Andrews Post Office Rural Carrier Irene Pressley, a 20-year USPS veteran, loaded up her Jeep with mail and headed out to deliver. But this day would be different. Miss Irene would never return. Irene Pressley was gunned down delivering mail that day. This presentation will cover the Postal Inspection Service investigation and involvement of the National Forensic Laboratory in bringing the killers to justice. The presentation will also cover the work on the documentary produced about the case.

Amoeba to AI: The Evolution of Biometric Technology (1 hour)
Presenter: *Hillary Daluz*

Artificial Intelligence. Machine Learning. Deep fakes. Spoofing. Maya Angelou once said, "You can't really know where you're going until you know where you have been." Sit back, relax, and enjoy a brief history of biometric technologies. How did AFIS become a crime-fighting powerhouse? What were the challenges faced along the way? Where are we now? And, most importantly, how will we meet the future challenges and triumphs that await us?

Back in the Saddle: DC DFS Latent Fingerprint Unit, the ride to reaccreditation and beyond (30 minutes)
Presenter: Mallory McCormick

This presentation chronicles the transformative journey of the DC Department of Forensic Sciences (DC DFS) Latent Fingerprint Unit (LFU) from the loss of accreditation to its triumphant return and renewed vision for excellence. The presenters will review the challenges that led to quality concerns, provide insight into the implementation of robust new policies and procedures, the revitalization of examiner training, and the human resilience that fueled our comeback. We'll explore how strategic investments in team-synergy, communication, and external partnerships helped rebuild a high-performing unit. Finally, we'll celebrate our reaccreditation milestone and outline our forward-looking goals to ensure continued success and integrity in forensic fingerprint analysis.

Learning Objectives:

This presentation will inform the audience by providing:

1. An overview of root causes and consequences of accreditation loss in the LFU
2. An evaluation of the role of examiner retraining and procedural reformation that led to reaccreditation
3. Strategies for fostering effective communication and engagement with stakeholders
4. Sustainable practices and future goals for maintaining accreditation and excellence in latent print examinations

Impact Statement:

This presentation offers a compelling case study in organizational recovery and resilience within forensic science. By detailing the unit's journey from accreditation loss to reaccreditation, it provides actionable lessons for other agencies navigating similar challenges. Attendees will gain practical insights into policy reform, examiner retraining, and stakeholder engagement that can be adapted to strengthen quality assurance and safeguard accreditation. The session aims to inspire a culture of continuous improvement and integrity across the forensic community.

Outline:

1. Brief overview (review of previous presentation by Angelic)
    a. Loss of accreditation/LFU Quality Issues
    b. Outsourcing
    c. Evolve Training Program
2. Implementation of improved policies
    a. New procedures
    b. Updated Training Manual
3. The Human Factor
    a. Dive into the difficulties faced by examiners and how we came out stronger in the end
    b. Discuss the value of re-training for experienced examiners
4. Rebuilding a Dream Team
    a. Team Synergy – good communication, goal focused, emphasis on building a strong team
    b. Retraining

c. Rebuilding relationships – presentations, symposium, testimony training with USAO
d. New SAB

5. Reaccreditation, we are back and better than ever!
    a. Number of examiners hired
    b. Casework resumption
    c. Efficacy of new policies
    d. Future goals to stay on the right path

Key Words: Accreditation, Quality Assurance, Examiner Training, Policy Reform, Resilience

Comparison of the Ultraviolet/Visible and Near Infrared Regions of Reflectance Spectra for Estimating Bloodstain Time-Since-Deposition (TSD) Using Multivariate Analytical Methods (45 min)

Presenter: Jessica Hovingh; (Co-author: Dr. Jacqueline Speir)

Bloodstains are a type of biological evidence often present at crime scenes and of tremendous value in criminal investigations. When shed during the commission of an offense, these stains permit event reconstruction, provide an important medium that can capture footwear and fingerprint impressions, and at the highest level of association, allow for the genetic identification and differentiation of possible perpetrators and victims. However, the use of bloodstains in time-since-deposition (TSD) estimation has not yet been fully explored, and if successful, may assist in elucidating valuable temporal information for forensic investigations.

The aim of this study is to compare the use of ultraviolet (UV)/visible (VIS), and near infrared (NIR) reflectance spectra for the age estimate of bloodstains. To accomplish this goal, a total of n = 29 adult human volunteers deposited n = 95 bloodstains for analysis. Using a FieldSpec® Spectroradiometer, n = 907 reflectance spectra were collected every hour for the first six hours after deposition, and every twenty-four hours thereafter up to five days.

First, principal component analysis (PCA) was performed through eigen-decomposition on the correlation matrix of the resulting spectra. Inspection of principal components 1 and 2 permitted an evaluation of inter-donor variability, which was determined to be low. Next, using partial least squares regression (PLSR), the reflectance spectra were reduced to a maximum of 10 latent variables. Finally, regression models were constructed using the reduced-dimension data, and accuracy in predicting TSD was evaluated via hold-one-donor-out cross validation. Preliminary results indicate that multinomial logistic regression (MLR) based on UV/VIS reflectance spectra is marginally superior to NIR reflectance spectra in forming accurate TSD predictions, and that more than 85% of all MLR-predicted TSDs are accurate within + 1 time interval. In other words, the best root mean square error of prediction (RMSEP) for short (1 – 6 hours) and long (1 – 5 days) TSD windows was 1.2 hours and 15.7 hours, respectively, when using UV/VIS spectra. The same measurement was 1.8 hours and 19.2 hours, respectively, when using NIR spectra. Moreover, an accuracy of 93.2% was obtained for MLR predicted ‘TSD + 1 hour’ for stains evaluated between 1 – 6 hours using UV/VIS, and 95.4% for ‘TSD + 1 day’ for stains evaluated every 24 hours (up to 120 hours or 5

days) after the first day since deposition, again using UV/VIS spectra. The same predictions were slightly less accurate (86.4% and 92.6%) when using NIR spectra. These preliminary observations and quantitative analyses strongly suggest that MLR is an attractive method for estimating bloodstain TSD for small stains (less than 20 mm in diameter), that are fully dry within 1 hour, and held at 21.4 + 0.9°C and 36.1 + 3.3% relative humidity for the duration of aging. Future work will explore how baseline accuracy varies as a function of stain dilution, environment, and diffusion on a porous substrate (for example, a blood droplet on a cotton bedsheet, or nylon carpet).

Death Investigation: From Phone Call to ...Nope, the Case Never Closes (1 hour)
Presenter: Julie Wolf

How does a death investigation start? By getting a phone call, of course. I'll take you through the notification process to the end of the investigation, which doesn't really end. We'll explore some cases that will leave you with more questions than answers.

Friction Ridge Details Beyond the Second Level (40 minutes)
Presenter: Richard Fenrich

Reliable identification using fingerprints depends upon persistence of features over time. Today's automated matching systems use persistent level 1 and level 2 features to deliver much improved identification hypotheses over the "old" days. Accordingly, automated matching of latent cases is also improving.
This lecture focuses on enhancements to fingerprint scanning technology designed to allow optimal fingerprint capture on 100% of the people. By optimal we mean the highest quality image from the fingers using the easiest and most time efficient capture process. As a result, operators of these fingerprint capture devices generate superb quality prints in minimal time and these prints will be ultimately stored in fingerprint databases that latent examiners use. Using pores as a primary example, we'll discuss how limits in existing technology are overcome so that third level details such as pores can be captured much more reliably thus enabling newer matching approaches and giving latent examiners another tool in their toolbox. The lecture also gives insights into other finer level details as motivated by the rich three-dimensional nature of fingerprints.

Human Remains Detection K9s: Enhancing Disaster Search and Recovery Operations (1 hour)
Presenter: Isabelle Denman

Law enforcement Human Remains Detection (HRD) K9 team plays a critical role in criminal investigations, applying specialized odor-detection skills to support searches, recover evidence, and assist multi-agency operations. The handler's expertise expanded into emergency management when the team partnered with FEMA during disaster search and recovery efforts following Hurricane Helene in Western North Carolina and severe flooding in Kerrville, Texas. These combined experiences highlight the operational challenges of transitioning between criminal casework and large-scale disaster environments, as well as the importance of adaptability and interagency coordination. Ultimately, the work underscores how HRD K9 teams provide essential capabilities that strengthen both investigative outcomes and community resilience.

Latent Print Certification Prep (1 hour)
Presenter: Cameron Stauffer

This training will provide the attendees with the basic information on how to complete the Latent Print certification application process. Instruction will cover requirements needed to become certified, the required reading materials, recertification information as well as potential sample questions on the history of fingerprints.

Laterally Reversed Fingerprints in Forensic Casework (20 minutes)
Presenter: Christopher Cavazos

Laterally reversed fingerprints occur when latent print residue transfers from one surface to another, or when developed latent prints are visible on both sides of and item, e.g. a piece of paper. They can easily be overlooked or analyzed incorrectly and could lead to several issues, including erroneous exclusions or a missed opportunity of an AFIS hit. This presentation explores the categories, characteristics, and implications of laterally reversed fingerprints in forensic casework. It highlights causes of lateral reversal and scenarios where it is more likely to occur through real case examples and published research. Attendees will gain a comprehensive understanding of how lateral reversals impact fingerprint analysis and case outcomes. Additionally, attendees will learn about detection methods and error prevention strategies to identify laterally reversed prints.

Networking in Forensics (2 hours)
Presenter: Cameron Stauffer

This session will provide attendees with networking skills as well as "tips" for getting hired in the forensics profession. This presentation will include information on internships, general education requirements, joining of professional memberships, business cards, forensic conferences, job applications, resume building, reference pages, interview/application process as well as general public speaking skills. This course will be ideally for those interested in finding a career in the forensics field, students looking towards a career in forensics or those that would like a refreshed in networking skills.

New Technology for Postmortem Fingerprinting (1 hour)
Presenter: Richard Fenrich

Capture of deceased fingerprints has many challenges due to the diverse states the remains may be in. Scanning fingerprints as closely to the time of death as possible is likely the last and best time these biometric markers can be collected with higher quality. But we do not usually get to choose the state of the remains when we receive access to them: cadavers are presented in various states of decomposition.
Identification International, Inc. “i3” has developed a fingerprint scanner whose design objective is to capture exceptional quality fingerprints on 100% of the *in vivo* population. This means the device captures fingerprints in all states from excessively dry to excessively wet and from excessively worn to pristine condition.
This lecture collaboratively explores the technical attributes of this scanner with emphasis on how this technology can be used effectively in cases this community engages in on a daily basis. Together we will explore the quality and imaging results achieved to date with an eye

toward understanding how these results can be improved and extended to better address your varied uses cases.
As we meet with various stakeholders such as Allegheny County Medical Examiner's Office in Pittsburgh, PA, i3 has identified enhancements to our 1000 ppi Wet Enhancement Technology "WET" that continue to keep us on the path to optimized cadaver fingerprint capture with the highest possible quality and usability. Our goal is to discuss what i3 has done and what the community needs so you can extend your capabilities to achieve excellence in fingerprint collection.

NTSB Overview and Perspectives on Disaster Victim Identification (45 minutes)
Presenter: *Daniel Morgan*

The National Transportation Safety Board (NTSB) is an independent federal agency that investigates accidents across aviation, highway, marine, rail, pipeline, and hazardous materials modes to determine probable cause, issue safety recommendations, and assist victims and their families. This presentation will outline the NTSB's mission, investigative process, and family assistance program which interfaces with local response authorities. This session will also provide NTSB perspectives on managing disaster victim identification operations.

One Man's Story: Forensic Science and the Innocence Project (1 hour)
Presenter: *Hillary Daluz*

Join us to experience an inspirational story of vindication. Hear about the role of forensic science in exonerations as we share one exoneree's moving story: from wrongful conviction to freedom.

Optimizing the Power of DNA to Solve Cold & Challenging Cases (1 hour)
Presenter: Angela Williamson

Cold and challenging cases demand persistence, innovation, and the right tools. Join Dr. Angela Williamson, Bode Technology's Vice President of Cold Cases, for a practical discussion on how to maximize the impact of DNA in investigations.
This session will explore:

- How to think beyond traditional methods to uncover new leads
- Advanced DNA technologies and innovative sampling techniques that can help generate probative evidence
- How to make the most of the resources available through your state or local lab—while also understanding what additional tools can be brought into play
- What federal grants are applicable to cold cases and advanced DNA testing

Whether you're working to move a stalled case forward or preparing to approach a difficult investigation, this presentation will highlight strategies and solutions that can open new doors.

Overview of Latent Print Testing (1 hour)
Presenter: Nicole Osborn

This presentation reviews the effectiveness of various methods for latent print examiner proficiency/competency testing. Different testing approaches can provide examiners with valuable insights into their performance and increase accuracy of their analytical decisions. Challenges, however, exist including the difficulty of designing realistic scenarios and the

limited access to representative test samples. Exploring different testing methods is crucial for enhancing the effectiveness and reliability of latent print analysis in forensic science.

Path Forward for AI in Forensic Science (45 minutes)
Presenters: Stephanie Stoiloff & Yaneisy Delgado (Virtual Presenters)

Within the Miami-Dade Sheriff's Office, Forensic and Technology Division, Forensic Intelligence Analysts assigned to the Forensic Intelligence Section in the Crime Laboratory routinely synthesize large volumes of forensic data, case records, and investigative data to identify patterns, link events, and support time-sensitive enforcement and prevention strategies. As these datasets continue to grow in both size and complexity, traditional analytical approaches alone are no longer sufficient to meet operational demands.

This presentation outlines a path forward for incorporating analytical tools, including artificial intelligence, into existing data workflows. By building upon established large-data analytical practices, the Crime Laboratory has adopted a responsible approach to analyzing data that enhances efficiency and strengthens the ability to make data-driven, informed decisions.

Strategic Collaboration: Solving Missing & Unidentified Child Cases with NCMEC (1 hour)
Presenter: Carol Schweitzer

The National Center for Missing & Exploited Children (NCMEC) searched for 29,570 missing children in 2024, and collaborated with authorities on trying to identify over 640 unidentified deceased children. High volume of cases requires a strategic approach to make the biggest impact at assisting law enforcement agencies nationwide at resolving these complex cases. NCMEC partners with key stakeholders that offer critical resources to help find missing children and to give names back to unidentified juveniles. Collaboration and the intentional layering of forensic resources lead to resolutions. Through case examples, NCMEC will demonstrate the success of this approach.

Testimony Made Easy/Public Speaking (1 hour)
Presenter: Cameron Stauffer

This training will provide attendees with "tips" for getting over the fears of public speaking. It will also show how we are not alone in having the fear of speaking in public, and how court testimony is directly related to just that, public speaking. Material will also cover what the jury is expecting from us as experts in our field, as well as ways of eliminating stress in our everyday jobs.

The Meth Hotel (45 minutes)
Presenter: Andrew Pinney

I will start with a brief overview of the USPIS. The case study is a 2021 joint federal/local law enforcement case that started in rural VA/NC with a traffic stop and seizure of a gun and approximately 1KG of methamphetamines. The investigation determined the suspects were using USPS to ship drugs from CA, and through some investigation (and forensic identification), we were ultimately able to identify and arrest the shipper in CA.

The Power of Leading from where you are (1 hour)
Presenter: *Hillary Daluz*

When you think of leadership, what comes to mind? Authority? Management? Mind-numbing budget exercises? We are going to shatter those expectations and explore why leadership is for everyone. When we lead from where we are, we build stronger teams, set ourselves up for success, and stimulate innovation beyond all expectations!

Veterinary Forensics: Incorporating a Change of Perspective in the Canine Role (75 minutes)
Presenters: *Tiffany Edwards and Eric Allagnon*

Providing education on how to approach scenes with a canine, whether victim-witness-suspect, allows for reduction in loss of physical evidence. Promoting awareness of assisting agencies such as the ASPCA, have specialized personnel and response units that assist with large scale fighting and cruelty cases, can collaborate and change the day-to-day scene processing perspective. When investigators understand documentation and evidence collection methodologies, available services we as a forensic community can strive to push further and do better.

What to Expect When Training Latent Print Examiners (1 hour)
Presenter: Nicole Osborn

This lecture provides an overview of what is required to train new examiners to competency as latent print examiners. Topics discussed include how people learn to compare fingerprints, the challenges when training new examiners, and what efforts can be made to shorten training times while increasing the impact of the training.

WVU-Unsolved Case Project- Joan Charlton- A collaboration with the Maryland State Police (45 minutes)
Presenters: *Tiffany Edwards and Kyla Dundon*

Working conjointly with the Maryland State Police, unsolved case files are shared with our undergraduate research team. Once the case files are obtained, our team of students will inventory and review the files, taking the time to immerse themselves in every documented detail of the case. As information is compiled and working theories are identified, students work to create a timeline of events, a geographical spatial relationship map of locations of interest, and identify members of the family tree to link possible sources for genealogical DNA sampling- all with the information contained within the case file. In addition, students will digitize the case file onto an external hard drive, completely off network to ensure confidentiality and will provide that back to the submitting agency upon completion of the review. Additionally, the hard drive will contain all case-related working documents, suggestions of evidence resubmission based on advanced technology, working theories and possible leads to explore with last known current location and contact information from public record search engines. Case Highlight: Joan Charlton- Frostburg State University 1983.