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Abstract Book

15th Global Webinar on Forensic Science

November 19-20, 2025

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Former Police Commissioner in New York, USA

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Prof. Anthony Schembri
Former Police Commissioner in New York, USA

Crime Scene Investigation and Management

This will be a presentation of real crime scenes and the management of efforts bringing together the forensic experts and the investigative personal to solve real cases. Having lead the Homicide Department department unlike CSI and other programs, police fail to collect and properly analysis a crime scene which I will demonstrate. We need to in terpret crime scenes. Sloppy police investigations, lazy forensic personnel team up to reduce the ability to solve cases with solid evidence. The research profession needs to catch up with policing, corrections and juvenile jus tice, and define a role for itself in the problem solving process. The research community needs to find ways to bring its analytical skills, its objectivity, its rigor, its independence, its ability to link theory and practice, into the messy arena of contemporary practice. Although we have made progress, the need is tremendous.

Biography:

Anthony Schembri is a respected law enforcement and academic professional with over four decades' experience in the field. Over the years, he has drawn praise from such varied sources as New York City Mayor, President Jimmy Carter, Florida Governor Jeb Bush, and New York Governor Mario Cuomo. First appointed to the Brooklyn District Attorneys Office he advanced to Deputy Chief of the Narcotics Bureau, then to Director of Training at the District Attorneys Police Academy. Anthony Schembri has served as the city's Deputy Inspector General, investigating cases of major crime and corruption. He was appointed by the Mayor of New York as Corrections Commissioner, a position putting him in charge of 12,000 uniformed officers and 20,000 inmates at 19 separate jail facilities. Today, the Citrus County, Florida, resident serves as a Visiting Professor at Oxford and Sheffield Hallam University and named Outstanding Professor of the Year at the University of Florida.

Dr. Antonietta M. Gatti
Nanodiagnostics Foundation, Italy

Forensic aspects of a neurological disease : Fronto Temporal Dementia

Frontotemporal Dementia (FTD) is a neurodegenerative disorder characterized by the progressive loss of neurons in the frontal and temporal lobes. While proteinopathies are known to be involved, the primary triggers of neurodegeneration remain elusive. This study investigates the potential role of exogenous environmental pollutants in FTD pathogenesis. We conducted high-resolution microanalysis of autoptic brain tissue using Field Emission Gun Environmental Scanning Electron Microscopy (FEG-ESEM) coupled with Energy Dispersive X-ray Spectroscopy (EDS). Our analyses, performed at significantly higher magnifications than standard histopathology, systematically revealed the presence of micro- and nano-sized particles (NPs) capable of crossing the blood-brain barrier. We observed organic-inorganic aggregates, suggesting nano-interactions between the particulate matter and endogenous proteins. Elemental composition classified these particles as ceramic and metallic debris. We discuss how these foreign bodies may interact with brain cells and neuronal electrical fields, potentially explaining specific neurological symptoms. Forensic analysis of the chemical composition's points to diverse anthropogenic sources, including vaccine adjuvants (e.g., Aluminum phosphate), industrial pollution (e.g., Iron-Chromium-Nickel alloys), and accidental combustion from sources such as warfare or incineration. These findings introduce a novel environmental hypothesis for the aetiology of FTD, but also to study other neurological diseases.

Biography:

Dr. Gatti has a degree in Physics and the PhD in Bioengineering. In 2012 she was honoured with an International Fellowship by the world Societies of Biomaterials and Engineering (FSBE). At present she is Vicepresident of the Nanodiagnostics Foundation with a specific mission on the health of babies and is supervisor of the scientific laboratory of the Foundation where a Field Emission Gun environmental Scanning Electron Microscope works for the nanopathologic studies. He is past-Professor of Biomaterials at the Faculty of Biotechnologies at the University of Modena-Reggio Emilia (Italy) and director of the Laboratory of Biomaterials. She was Consultant of all the Governmental Commissions on Depleted Uranium and related diseases and had 2 auditions at the House-of-Lords in London and collaborated with the Department of Defense in USA. She was Coordinator of the nano-eco-toxicological Project of the Ministry of Defence of Italy and coordinated two EU research projects of Nanopathology, Nanotoxicity and of Nanoecotoxicity.

Prof. Marian Swindell
Mississippi State University-College Park, USA

Forensic Social Work Perspectives on Post-Incarceration PTSD Symptomology

This presentation examines post-incarceration Post-Traumatic Stress Disorder (PTSD) through a forensic social work lens, emphasizing the neuropsychological, behavioral, and emotional symptomology experienced by individuals serving life sentences who have subsequently been released. Using a mixed-methods research design, this study integrates quantitative measures of PTSD symptom severity with qualitative life-history interviews to explore the lived experiences of "lifers" adjusting to freedom after decades of confinement.

Findings highlight how prolonged exposure to hypervigilance, institutional routines, and moral injury alters both neurological functioning and emotional regulation, often manifesting as intrusive memories, guilt-laden cognition, and persistent sleep disturbances. The qualitative narratives reveal recurring nightmares and sensory flashbacks rooted in carceral trauma, illuminating how the body and mind continue to respond to perceived threat long after release.

By merging empirical data with narrative analysis, this research underscores the unique contribution of forensic social work in understanding post-incarceration trauma as both a psychological and systemic phenomenon. The presentation also discusses trauma-informed reentry practices, emphasizing interdisciplinary collaboration among neuroscientists, social workers, and policy makers to address the long-term consequences of incarceration on mental health and community reintegration.

Ultimately, this work challenges conventional views of rehabilitation by framing post-incarceration PTSD symptomology as a chronic and socially mediated condition—one requiring sustained, trauma-responsive care and justice-oriented advocacy.

Biography:

Dr. Swindell is a tenured Full Professor of Social Work at Mississippi State University–Meridian, a forensic interviewer, and a mitigation specialist. Her research focuses on interventions that work, with a commitment to ending ineffective practices and advancing evidence-based approaches. As both a scholar and practitioner, she "stands in the gap" for the executed and the silenced—bringing the stories of death row inmates and victims of suicide into spaces where justice, compassion, and dignity are at stake. A proud mother of two sons, she integrates faith, advocacy, and scholarship in her professional mission.

Mihaela Brooks
Criminal Investigative Analyst,
Canada

Beyond Observable Behavior: Neurocognitive Approaches to Determining Offender Intent

To establish intent in violent crimes, one must show that the offender acted or failed to act deliberately. This presentation illustrates how behavioral and neuroscientific frameworks assess cognition, emotion, and executive control in decision-making. The analyzed case involves a victim beaten severely by her husband and left comatose. After the assault, the offender waited nearly twelve hours to seek medical help, claiming he could "care for her personally." Neurocognitive analysis confirms that withholding aid was a deliberate choice. The offender let the victim's condition worsen, hoping her death would prevent accountability. Neurocognitive evidence shows that withholding medical help was intentional. This reflects cognitive control, not the inability to recognize the gravity of the injuries. Neurocognitive indicators such as limbic inhibition, goal-directed detachment, and strategic avoidance appear in the offender's verbal and behavioral patterns. Analyzing these mechanisms helps investigators assess the offender's awareness and intent, especially when direct evidence is lacking.

Biography:

Criminal InvestigativeAnalyst Criminal Intelligence Analyst Geographic Profiler GPA I CertifiedAnti-TerrorismSpecialist.

Dr. James Frizzell
Frizzell Dental, Canada

Forensic Psychology: Cannibus Effects

FORENSIC PSYCHOLOGY: CANNIBUS EFFECTS

1. The effects of cannabis influences how hospital emergency HCP's and law enforcement deal with cannabis users.
2. Cannabis causing paranoia and schizophrenia.
3. Cannabis effecting facial expression recognition/interpretation.
4. Cannabis destruction of mother's maternal instinct.
5. The high potency of cannabis in 2025 in comparison to the low potency used by hippies in the 1960's.

Biography:

Dr. James graduated from a one-year course, McGill University, Dental Forensics Program; part on-campus training with the Surete du Quebec Forensics Team. Dr James is focusing on Child Abuse, Elderly Abuse, Human Trafficking, and Intimate Partner Violence. He also gives educational PowerPoint presentations on these topics. Also, trained at University of Tennessee, Body Farm, and Clandestine Grave Recovery. Dr Frizzell's motto is: "The Power of Observation", in the forensic's world.

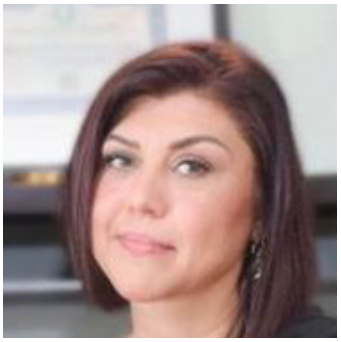
Michael Graziano
Executive Digital Group, USA

Emerging Trends in Digital Evidence Collection: Challenges and Innovations in the AI and Cloud Era

Digital forensics plays a pivotal role in modern investigations, where almost all crimes involve some type of digital evidence. This presentation explores the foundational principles of evidence collection—identification, preservation, acquisition, and analysis—while addressing the evolving landscape shaped by rapid technological advancements. Core best practices, such as maintaining the chain of custody and adhering to standards, are emphasized to ensure admissibility and integrity. Focusing on current trends, the discussion highlights innovations like AI-driven tools for automated artifact detection and deepfake authentication, cloud forensics for remote data extraction amid jurisdictional complexities, and IoT/mobile forensics for handling fragmented data from smart devices and encrypted applications. Additional trends include blockchain analysis for cryptocurrency crimes and collaborative platforms for secure evidence sharing. Challenges, such as data volume overload, encryption barriers, and AI biases, are examined through real-world case studies, including ransomware investigations and ethical dilemmas in privacy versus investigative needs. By blending traditional methods with cutting-edge developments, this session equips attendees with actionable insights to navigate digital forensics. Throw into the mix the prospect of quantum computing, which may further disrupt encryption, underscoring the need for adaptive strategies. Attendees will gain information to enhance their investigative skills.

Biography:

Michael Graziano is a retired Detective who worked at the Suffolk County Police Department. Michael Graziano worked with the Suffolk County Police Department for 25 years. Michael began his career as a Patrol Officer. Due to his extensive computer and programming skills, along with his ability to implement these skills in his police work, he was promoted to work in the department's C.O.P.E. Unit and then the department's I.T. Section.During his work in these units, he was responsible for creating programs that tracked gang members, stolen items, and patrol checks. Michael had been awarded several department recognitions for his arrests resulting from his police investigations. Michael was promoted to Detective and assigned to the Computer Crime Unit. During his almost 12 years in the Computer Crimes Unit, Michael was responsible for forensic analysis of digital evidence, including computers, mobile devices, DVRs, and other digital media, in such investigations as homicide, narcotics, white color crimes, and child exploitation. Michael was responsible for initiating and leading forensic investigations within the Megan's Law task force. Michael had been awarded several recognitions for his hard work in child exploitation cases that resulted in protecting children from sexual exploitation. Michael finished his last year with the Suffolk County Police Department as a Detective in Criminal Intel, where he was responsible for forensic investigations involving homeland security and gang investigations. Been a speaker on CBS News regarding cybersecurity. Michael is the co-owner, with his wife, of Executive Digital Group. Executive Digital Group offers services that include Digital Forensics, Cybersecurity, along with I.T. Technology strategies and support.



Zaida Melissa Guajardo
Centro Grafologico ZG, USA

"The Language of Letters: Uncovering Alerts in Handwriting" Graphology

Graphology is the study and analysis of handwriting with the aim of uncovering insights into a person's personality, emotional state, and psychological traits. Based on the idea that handwriting is a reflection of the subconscious mind, graphologists examine elements such as letter size, slant, spacing, pressure, and rhythm to interpret behavioral tendencies and emotional conditions. While not considered a definitive science, graphology is used in various fields including psychology, recruitment, and forensic investigations, offering a unique lens through which human behavior can be observed and understood. Handwriting is more than just a method of communication—it's a silent language that speaks volumes about a person's inner world. Through the study of graphology, experts have discovered that subtle features in handwriting can reveal emotional distress, psychological tension, and even hidden personality traits. From erratic slants and uneven pressure to trembling strokes and distorted letter shapes, these alert signals act as red flags that something deeper may be occurring beneath the surface. By learning to interpret these signs, we gain a powerful tool for understanding human behavior, offering insights that can support mental health awareness, personal development, and even forensic investigations.

Biography:

Zaida Melissa Guajardo, Criminal Profiler, Handwriting Analyst, Grapologist. Bachelor's Degree in Criminal Justice Forensic Investigations National University Master's Degree in Criminal Profiler Escuela Internacional de Criminologia y Criminalistica.Professional Technology in Graphology and Graphotherapy.

Sarah Lambert
CSI Field Guide LLC, USA

Processing Evidence from a Fire Scene

Fires and explosive devices remain a significant threat during criminal activities, creating ongoing challenges for crime scene investigators. One of the primary challenges is the processing of evidence, particularly fingerprints and DNA, from the interior of fire scenes. Soot coverage and heat damage complicate the process, often obscuring or destroying potential evidence. Recent research has shown that it is increasingly possible to recover fingerprints and DNA from items exposed to fire, including a Molotov cocktail or incendiary device. The potential to locate and recover this evidence is critical to the investigative process. Effective removal of soot at the scene is essential, as it allows investigators to visualize blood and fingerprints that existed prior to the fire allowing for blood spatter analysis or collecting fingerprint and DNA evidence. Several methods have led to successful identifications, with some approaches yielding usable results in up to 20% of items collected and processed from fire scenes. Techniques for soot removal such as the application of SPR (Small Particle Reagent), Absorene (specialized soot remover), Isomark (silicone spray), plain water or fingerprint tape have proven effective for removing soot and exposing evidence beneath it, facilitating subsequent analysis. To further enhance the newly found prints, they can be photographed using infrared (IR) lighting or other Alternate Light Sources (ALS), which emit a variety of wavelengths allowing fingerprints and accelerants to become visible. Alternatively, fingerprints can be enhanced with cyanoacrylate fuming with Basic Yellow 40 dye, then photographed as it enhances visibility.

Biography:

Sarah Lambert has a master's degree in forensic science from Nebraska Wesleyan University. She has been working as a Crime Scene Investigator for 12+ years in California and Texas, USA. Sarah recently published Crime Scene Investigator (CSI) Field Guide, a reference guide for use in the field by crime scene investigators which includes a variety of documented methods.

Prof. Ian Turner
University of Derby, UK

Ctrl+C, Ctrl+AI? Rethinking Writing and Forensic Research in the Machine Age

Artificial Intelligence is rapidly transforming the way we approach academic writing and research. From idea generation and literature reviews to structuring arguments and refining style, AI tools promise efficiency, creativity, and accessibility. Yet they also raise critical questions about authorship, bias, equity, and academic integrity. This presentation explores both the opportunities and challenges of using generative AI in scholarly work, highlighting its potential to support students and researchers while emphasising the risks of overreliance and exclusion. By drawing on practical examples and emerging case studies, I will examine how AI can be responsibly integrated into research practice. The session invites participants to reflect on where the human voice remains irreplaceable, and how we can reimagine writing, assessment, and scholarship in a rapidly changing landscape.

Biography:

Ian is Head of Biomedical and Forensic Science, and a Professor of Learning and Teaching at the University of Derby (UK). He is a National Teaching Fellow and Principal Fellow of the Higher Education Academy; he was named Royal Society of Biology Higher Education Lecture of the Year in 2017. His research interests centre around game-based learning and playful pedagogies.

Robert B. Fried

EVP of Forensics and Chief Investigative Officer, Page One, Inc, USA

Electronic Evidence Management: A Forensic Perspective

The If evidence is not handled properly or if chain of custody documentation is not maintained, it is highly probabe that evidence will not be admissable in a court of law. This presentation will discuss key aspects of electronic evidence management, including its proper handling, secure storage,,and auditing throughout the lifecycle of a matter. .

Biography:

Robert B. Fried has over 23 years of experience collecting and investigating electronic evidence. Robert serves on the Board of Advisors for the Masters in Investigations program at the University of New Haven, and the EC-Council Global Advisory Board for the CHFI certification. He maintains certifications, including: CFCE, EnCE, and GCFA. Robert is a licensed PI in Michigan, New York and South Carolina. He is the author of the books, Forensic Data Collections 2.0: The Guide for Defensible & Efficient Processes and Forensic Data Collections 2.0: A Selection of Trusted Digital Forensics Content.

Dave M Oswald
Forensic Restitution, Canada

Financial Statement Fraud

Financial statement fraud remains one of the most destructive and under-detected threats to organizations across all sectors. This session examines how management manipulation, weak controls, and pressure-driven decision-making create opportunities to distort revenues, expenses, asset values, and liabilities. Using real-world case studies drawn from investigations in construction, transportation, First Nations governance, and privately-held companies, the presentation demonstrates how red flags are missed, how schemes evolve, and how forensic accountants reconstruct the true financial picture. Attendees will learn practical techniques for detecting anomalies, validating source data, and protecting organizations from the next wave of sophisticated financial reporting fraud.

Biography:

Dave Oswald is the Principal of Forensic Restitution, a boutique forensic accounting and investigation firm based in Oakville, Ontario. A Chartered Professional Accountant and Certified Forensic Investigator, Dave has led complex fraud, corruption, and financial-misrepresentation cases across Canada and internationally. His work spans procurement fraud, construction inflation schemes, business interruption claims, asset-misappropriation investigations, and high-stakes litigation support. Known for his clear, evidence-driven analysis, Dave has assisted law firms, insurers, First Nations, and private companies in uncovering the truth behind distorted financial records. He is a frequent speaker on fraud risk, ethics, and forensic methodologies, and serves on the ACFI Board of Regents.

Prof. Robert MILNE

European Forensic Institute & Honorary Editor of Chartered Society of Forensic Sciences, United Kingdom

Electrostatic dust shoe & Tyre mark search and recovery techniques

The technique of electrostatic dust mark lifting was created by a Japanese police officer Kato Masao in 1972 as a means of finding and recovering faint dust shoe marks from the flooring materials in traditional Japanese homes. To lift dust shoe marks on to black plastic film, Masao adapted a valve power supply from a cathode ray television. By the 1990s the technique was adopted in the United Kingdom. The first apparatus available in the UK like Kato Masao's device consisted of a high voltage power supply with metal plates, cables with crocodile clips and heavy brass locks to weigh down on the lifting film. The current and exposed connections in these early devices made them clumsy and care to avoid electrical shock had to be taken.

Professor Robert MILNE by examining the science of the propagation of electric fields in substrates (dielectrics), redesigned the equipment and created as safe wireless, three electrode system used in the Pathfinder Electrostatic Dust mark lifter. The new design would only produce high voltage output if it was in the right place at the right time under the control of the operator. This innovation made the technique ergonomic, safe and easy to use. The topic was the subject of Milne's dissertation to Kings College London University in 1999 and published in the Journal of The Fingerprint Society. The thousands of shoe marks revered by the technique was coded to provide forensic intelligence data revealing links and clusters of crimes for use by analysts. Pathfinders are used worldwide in the 21st Century. Remember criminals can cover their faces and hands, but they cannot fly. Often shoe marks will not be easily seen even with good oblique lighting but with the electrostatic technique will be seen once lifted on smooth black mylar film. Tyre marks can also be recovered from concrete. Tarmac and industrial flooring in warehouses etc.

Biography:

Professor and Dean of Applied Sciences European Forensic Institute. Between 1969 and 2008, he had a full career as a practitioner with the Directorate of Forensic Services New Scotland Yard, in the roles of Fingerprint expert, Crime scene Investigator, Crime Scene manager and Crime Scene Coordinator. In project management he created modern sequential treatment laboratories designed to deal with the volume crime in London and pioneered the concept of Forensic Intelligence. He set up one of the world's first Forensic Intelligence Units in 2001 and was the Head of Forensic Intelligence Metropolitan Police until 2008. He has the Kings College London University Diploma in Crime Scene Investigation and Fingerprint Expertise. He developed the wireless, three electrode, method of electrostatic dust mark lifting, the Pathfinder' now used worldwide. In 2012 he published the textbook 'Forensic Intelligence' CRC Press. In 2018 he joined the European Forensic Institute as a lecturer and was invited to lecture on Forensic Intelligence at the Istituto Di Scienze Forense, Corporate University, Milan. In 2021 he was awarded a Professorship in Criminology, Forensic Criminology and Forensic Intelligence and awarded the role of President of the Istituto Di Scienze Forense University Milan. In February 2024 the university renewed his professorship. He has been a member of the Chartered Society of Forensic Sciences (CSFS) since 1983, and in October 2024 was elected as the Honorary Editor of the CSFS.

Christabel Francis
University of Calabar, Nigeria

Review of Scatter Patterns of Human Remains in Indoor Environments by Domesticated Cats (Felis catus) in the United Kingdom and their Forensic Implications: A Case Study

A 32-year old Caucasian male in the United Kingdom was found dead at his residence three days post-mortem. Although the study was conducted in retrospect (1993), it has the significance of highlighting the need for forensic practitioners to be acquainted with patterns of animal activity on carcass and avoid misinterpretation of evidence. Domesticated cats rely mostly on human provision to get a balanced diet. The amount of food available at the residence following the death of the pet owner does not influence the timing for which the cats can raid the carcass. Scavenging has a unique role in facilitating the process of human decomposition. The act of indoor scavenging is enabled by the presence of domesticated animals like cats (Felis catus) such that when their owners are deceased, the possibility of feeding on the carcass is high. The death of pet owners could be due to natural causes, suicide or accidents within the confines of their homes. The involvement of pets in the decomposition process could hamper the estimation of post-mortem interval (PMI). Cats are known to consume soft tissues from the cranial and neck regions of the body. The scatter patterns on the bones present in the form of pits, punctures, scores, and furrows. Feline scavenging occurs in four stages based on the timeline which spans between 4 hours to 52 months post-mortem. In conclusion, these stages reveal the breakdown of human remains from the absence of disarticulated bones and presence of soft tissues to complete skeletonisation with unique patterns on the bones.

Biography:

Christabel Francis is an Assistant Lecturer at the department of Anatomical Sciences, University of Calabar, Nigeria. She obtained her first degree in Anatomy from the department of Anatomical Sciences in 2018. She proceeded to get a Master's degree in Forensic Science (Forensic Taphonomy) at the University of Kent, United Kingdom in 2023. She is a passionate Forensic Scientist who would like to push the frontiers of the field in Africa. Her short-term goal is to mentor young scientists who are willing to take Forensic Science as a career path in Nigeria. She intends to establish a private Forensic Crime Laboratory in Nigeria in the near future.

Rachael Strzelecki
Arden University, UK

The Use of Virtual and Augmented Reality in Forensic Investigation Studies in Higher Education to advance and enhance the student learning journey

There are several benefits to using virtual reality and augmented reality within education. Andrew (2021) conducted a neuroscience study to look at the effect that AR has on the brain. The study showed the following three main ways that augmented reality affects the brain. Firstly, AR drives high levels of visual attention in the brain, almost double that of non-AR related tasks. Secondly, AR elicits a 'surprise' response in the brain and finally what is stored or encoded into memory is 70% higher for AR experiences (Andrews, 2021. How augmented reality affects the brain) Smith (2021) also noted that AR and VR technology allowed for fast and effective transfer of information for students and can bring an alternative and interactive learning experience. According to EdTech and the American University School of Education (2021), a mixed reality, both VR and AR, improved the student outcomes in a biology classroom. It improved the memory, retention, and recall ability whilst VR alone only improved the retention. Smith (2021) also noted that the use of VR and AR enhances engagement with study. The technology can also enhance the understanding of complex topics and improve retention in study programmes. At Arden University, these principles are being put into practice within the BSc (Hons) Forensic and Criminal Investigation undergraduate programme with the immersive virtual and augmented reality crime world. Students will use this VR and AR to supplement their online learning with a host of formative tasks relating to forensic investigation. These tasks will be recorded and collated as their summative assessment. With greater interaction and immersive learning, students should remain engaged in their studies for longer and achieve higher grades within their modules learning.

Biography:

Rach Strzelecki started her career as a Crime and Intelligence Analyst for Cleveland Police, working on several major investigations including human trafficking, vulnerable missing persons, drugs, and suspicious deaths. In 2006, she started guest lecturing for Teesside University in crime analytics, intelligence, and forensic investigation before securing a permanent role as a lecturer in policing. Rach has also worked at University of Wolverhampton, Interactive Pro, Buckinghamshire College Group and more recently holds a position of Head of School at Arden university. Her research has predominantly related to sexual offences and paedophilia however her publications have been within the field of terrorism, police and forensic investigations and online teaching and learning. Since joining Arden university Rach has pushed the boundaries in teaching forensic investigation with the creation of a virtual reality crime world where students can practice the processes and procedures in a virtual world, building up those employability skills before they graduate and enter into the industry.

Rudolf Van der Berg
Forensic Pathology Service, South Africa

Fingerprint Techniques for Identification of Deceased: An Unusual Application

Unknown deceased are received at mortuary facilities in various conditions or stages of decomposition. The bodies can be decomposed, burnt, mutilated, mummified, or partially skeletonized. Obtaining fingerprints from deceased is one of the most effective ways to identify a body in South Africa since it provides immediate access to the name and address of an individual via HANIS or AFIS.

There are several fingerprinting techniques used to obtain fingerprints from deceased: the ink method, powder and tape method, degloving (epidermal prints), boiling method (dermal prints), microsil, macrophotography, and then rehydration of mummified fingers. Each method is chosen according to the condition of the deceased's hands. The ink method can only be used on "fresh" bodies whereas powder and tape are the preferred method for obtaining fingerprints from more challenging cases.

To obtain fingerprints that are sufficient for identification of deceased or for solving crime scenes, adequate fingerprint training needs to be done. Obtaining usable prints from deceased with advanced fingerprinting techniques is possible in cases that would otherwise not have been considered for fingerprinting. This leads to a greater and faster identification rate which brings closure to loved ones and clues in solving criminal cases.

The powder and tape method is also used by the South African Police Forensic Units to lift fingerprints from crime scenes.

During 2007 and 2008 there were over 20 unsolved housebreaking crime cases in three coastal regions in the Western Cape, South Africa. Various "possible criminal" finger-

prints were lifted from these scenes. The "suspects" remained unidentified for some time until a comparison was made against fingerprints collected from a troop of baboons active in the area. This proves that it is important to keep an open mind, since fingerprint identification can be obtained from sources that people might consider bananas.

Biography:

My name is Rudolf Van der Berg, and I am employed as a Specialist Forensic Investigator with the Forensic Pathology Service (FPS) in the Department of Health, Western Cape. I currently serve in the rural region of the Western Cape, where I have been performing specialised duties as a Death Scene Investigator for the past five years. Prior to this, I was based at the Metro District Office in Cape Town. Before joining FPS, I served 18 years in the South African Police Service, from February 2002 until April 2020. During this time, I was stationed at Ladysmith LCRC in KwaZulu-Natal and later at Somerset West LCRC in the Western Cape. I performed a broad range of forensic duties, including Official Photographer, Draughtsman, Videographer, and Forensic Examiner. These roles allowed me to gain extensive experience in crime scene documentation, evidence processing, and forensic analysis. Throughout my career, I have completed numerous theoretical and practical training courses at leading SAPS training institutions, including Pretoria, Durban Provincial Training (KZN), Pretoria CRC, Ladysmith LCRC (KZN), Paarl Training Institution (WC), and Somerset West LCRC (WC). Through these training interventions, I was trained in Crime Scene Investigation, Advanced Crime Scene Processing techniques, fingerprint analysis, forensic photography, plan drawing, and videography. I further completed the LCRC Forensic Course for Crime Scene Investigation and the DNA Evidence Recovery Course, where I received training in search, recovery, presumptive and confirmatory testing, and collection of human biological fluids. Additionally, I completed an AFIS expert operator's course. In 2006, I appeared before an adjudicational panel and was evaluated across various categories involving crime scene processing and fingerprint analysis. I was found competent and was awarded the status of Criminalistic and Fingerprint Expert, a milestone that reflects my commitment to professionalism, accuracy, and ongoing development in the forensic field. Over the years, I have remained passionate about advancing forensic practice, ensuring highquality.

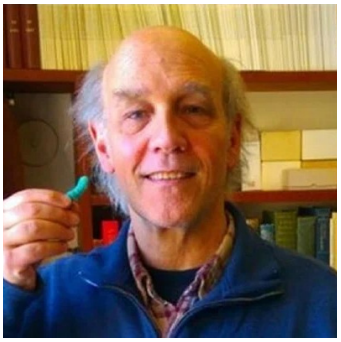
Melissa Phelan
CEO- FateGuard Inc. and Alternative Eye, USA, USA

FateGuard: Leveraging Technology for Public Safety Beginning in the Dating World

As digital connections increasingly lead to real-world interactions, personal safety in the dating landscape has become an urgent concern. FateGuard is an innovative public safety application designed to address this need at its origin- within the dating world- while expanding its impact into broader community safety. The app combines real-time emergency dispatch, non-emergency response features, and community-powered support systems to provide a multi-layered approach to user safety. What sets FateGuard apart is its seamless integration of advanced safety features with a proactive public safety model. Users can discreetly alert emergency services, activate real-time location tracking, and connect with vetted community responders. We also maintain partnerships with local venues, restaurants, coffee shops, and other establishments to ensure our users are surrounded by trusted community partners during their interactions. Additionally, FateGuard fosters empowerment through local support groups, educational tools, and a collaborative ecosystem that includes strategic partnerships with rideshare platforms to close critical response time gaps. This presentation will explore the development and deployment of FateGuard, the role of tech in forensic and preventive safety, and how cross-sector partnerships can redefine public safety in the digital era. Attendees will gain insight into how such technology can assist forensic professionals, law enforcement, and public health stakeholders in understanding patterns, enhancing response coordination, and building safer communities.

Biography:

Melissa Phelan is a seasoned forensic profiler and crime analyst with over a decade of professional experience and nearly 20 years of research into her unique methodology. Her work blends traditional investigative techniques with non-conventional approaches such as geographical profiling and remote viewing to assist in solving cold cases. Melissa is the Founder and CEO of FateGuard, an innovative public safety app currently in development that focuses on proactive safety beginning in the dating world. Deeply committed to the communities she serves, she also hosts the podcast Alternative Eye: Beyond the File, where she collaborates with experts to decode cold cases through her distinctive lens. Her dedication to public safety, innovation, and victim advocacy continues to shape the future of forensic work and community protection.



Louis N Sorkin, BCE
Consulting Entomologist, Entsult Associates, Inc., USA

An Introduction to Forensic Entomology

The various examples of forensic entomology are examined in this presentation. Most people think of insects and homicide investigations (and TV shows) when they hear the term, but forensic entomology may also be a discipline associated with internal medicine, dermatology, and dentistry (odontology); pest species infestations of buildings, foods and food products; and cases where arthropods are intimately associated with animals and people. I will be showing examples of crime scene investigations, specific species infestations, biological information of various arthropod species, and certain rearing techniques. Crime scene inspections and investigations are reviewed for unique cases involved with specific insect and arachnid species that may have been overlooked if it were not for knowledge of biology and behavior of certain arthropod species. I became interested in the common bed bug (Cimex lectularius), its biology and behaviors, and to do so have reared and fed hundreds of thousands of them on myself over the years. I have observed various personal skin reactions to bed bugs feeding plus the imbibed blood can be assayed in DNA analysis if these are collected from crime scenes.

Biography:

Louis Sorkin received his Masters of Science in Entomology from the University of Connecticut, at Storrs and began his entomological career of over 43 years in the Department of Entomology (Division of Invertebrate Zoology) at the American Museum of Natural History, New York City, working on arachnid systematics and insect cuisine. He also curated the extensive, preserved arachnid and myriapod collections. He has worked with pest management companies and has taught recertification courses over the years relying on proper identification and ecology to manage and control pest species. He is the principal entomologist and founder of Entsult Associates, Inc.

Prof. Shaimaa Mohamed Hassan
Battergie Medical College, Saudi Arabia

Rosmarinic acid in a rat model of polycystic ovary syndrome: Targeting MCP-1 and VEGF: A histological, immunohistochemical, and biochemical study

Polycystic ovary syndrome (PCOS) is a multidisciplinary endocrinopathy that affects women of reproductive age. It is characterized by menstrual complications, hyperandrogenism, insulin resistance, and cardiovascular issues. The current research investigated the efficacy of rosmarinic acid in letrozole-induced PCOS in adult female rats as well as the potential underlying molecular mechanisms. Forty female rats were divided into the control group, the rosmarinic acid group (50mg/kg per orally, po) for 21 days, PCOS group; PCOS was induced by administration of letrozole (1 mg/kg po) for 21 days, and rosmarinic acid-PCOS group, received rosmarinic acid after PCOS induction. PCOS resulted in a marked elevation in both serum luteinizing hormone (LH) and testosterone levels and LH/follicle-stimulating hormone ratio with a marked reduction in serum estradiol and progesterone levels. A marked rise in tumor necrosis factor-α (TNF-α), interleukin-1β, monocyte chemotactic protein-1, and vascular endothelial growth factor (messenger RNA) in the ovarian tissue was reported. The histological analysis displayed multiple cystic follicles in the ovarian cortex with markedly thin granulosa cell layer, vacuolated granulosa and theca cell layers, and desquamated granulosa cells. Upregulation in the immune expression of TNF-α and caspase-3 was demonstrated in the ovarian cortex. Interestingly, rosmarinic acid ameliorated the biochemical and histopatho logical changes. In conclusion, rosmarinic acid ameliorates letrozole-induced PCOS through its anti-inflammatory and antiangiogenesis effects.

Biography:

I am Dr. Shaimaa Mohamed Abd El-Fattah Hassan, an Associate Professor of Histology and Cell Biology .I earned my M.B.B.Ch. (Excellent with Honor), M.Sc. , and M.D. from Menoufia University. I also hold a Professional Diploma in Medical Education and certifications in item authoring, bioethics, and AI in medical education, teaching and training. My research focuses on experimental and clinical studies, medical education, stem cells, disease models, and nanoparticles, with around 20 publications in Q1–Q2 journals indexed in Scopus and Web of Science. I have actively participated in several international conferences and serve as a peer reviewer for leading international journals. I am a member of the Egyptian Society of Histology & Cytology and the Egyptian Society for Medical Education (ESME).

Katie-Jane Hobbs
Havant and South Downs College - Alton, UK

Adapting Forensic Teaching for the virtual world

Teaching forensic science as a discipline can be extremely challenging as it requires a lot of in-depth knowledge and technical know how as well as consistency and practical skills that ensure scientific knowledge and impartial working throughout to ensure the evidential processes are followed stringently to ensure continuity of evidence for court. This involves lots of practical experience including mock crime scenes and various different practical areas such as forensic biology (DNA Analysis) and Forensic Chemistry (Drugs Analysis). During the 2020 pandemic it became apparent that teaching face to face would need to be adapted. This webinar looks at the different ways teaching can be adapted to ensure learners still get the same experience without compromising the learning. We look at virtual reality software, virtual classroom learning and software. The comparison of these techniques to current practice is completed and a conclusion drawn from this.

Biography:

My name is Katie-Jane Hobbs and I am currently working as a Forensic Science and Criminology course leader and lecturer at Havant and South Downs College - Alton in the United Kingdom. I have always had a passion for forensic science ever since I was young and specialise in the Archaeological aspects of forensic science. I have obtained my degree and masters from Staffordshire University and will be starting a PhD in Criminology next September. I really enjoy the subject knowledge and looking into the reasons why criminals behave in a certain way. I have a passion for the field and work well with my colleagues and learners. My field allows me to grow and develop and work to my ability.

Denise Gemmellaro
Kean University, USA

'Importance of entomological evidence in death investigations - the role of the ABFE"

In the past few decades, it has become increasingly clear how valuable the entomological evidence found on or around a corpse can be in death investigations. Such evidence can help estimate the minimum time since death, track postmortem movement of remains, and even detect the presence of xenobiotics. To ensure that insects and arthropods provide information that is both reliable and admissible in court, they must be documented, collected and preserved according to specific standard operating procedures (SOPs) and protocols refined and formalized by the American Board of Forensic Entomology (ABFE). Established in the 1990s, the ABFE aims "to promote education for, research in, and the practice of medico-legal entomology (sensu lato) in forensic science." This presentation will highlight both the importance and the limitations of entomological evidence in forensic investigations. It will also discuss the role of the ABFE in ensuring rigorous scientific standards in medico-legal entomology and in certifying the knowledge and competencies of practitioners in the field.

Biography:

Dr. M. Denise Gemmellaro received her PhD in Entomology from Rutgers University, with a dissertation in Medico-Legal Forensic Entomology, which is the application of the study of insects to forensic investigations. She has been involved in the field of forensic entomology for several years, during which she has trained state police, FBI, pathologists, lawyers and other professionals in the field of forensics, as well as undergraduate and graduate students. Dr. Gemmellaro's research is focused on using insects (maggots) in forensic investigations to establish time of colonization, movement of the bodies and potential presence of illegal substances in the body; moreover, she is conducting research in other areas of forensic, such as BPA (Blood Pattern Analysis), forensic molecular biology and forensic entomotoxicology. Dr. Gemmellaro is a Diplomate and current vice-chair of the American Board of Forensic Entomology, and of several forensic societies, among which the American Academy of Forensic Sciences (AAFS), the Entomological Society of America (ESA), the North America Forensic Entomology Association (NAFEA), the European Association for Forensic Entomology (EAFE)."

Dr. Carlos A. Gutierrez
Chaminade University of Honolulu USA

Forensic Comparison of Sands in Oahu, Hawaii Using SuperSpectral Technology

Introduction: This research aims to analyze the different types of sand found on eight beaches on the island of Oahu, Hawaii.

Objective: The human eye can see a range of wavelengths from 400 to 700 nanometers. Below 400 nanometers, special UV light and filters are needed to observe the characteristics of different elements, in this case, sand. On the other hand, to observe wavelengths over 700 nanometers, IR technology and filters are necessary, which allow us to see the characteristics under this light.

Methodology: In this analysis, a regular SLR camera, an SLR IR camera, and the latest forensic technology for multispectral analysis called SuperSpectral from ForenScope were used to compare eight samples of different beaches on the island of Oahu. These sands were collected, dried, and weighed. For the analysis, the researcher used the same amount (100 ml) of sand.

Results and Conclusions: During this presentation, congress attendees will learn about the method, findings, and results of this forensic analysis, as well as how this sand database can assist in future criminal cases. Another key aspect that this research will demonstrate is the differences in findings among the regular camera, IR camera, and SuperSpectral technology. .

Biography:

Carlos A. Gutiérrez Ayala holds a Doctorate in Forensic Sciences from the Instituto de Ciencias Jurídicas de Nayarit (Law Science Institute of Nayarit State), Mexico. He also earned a Master of Science in Forensic Sciences from Chaminade University of Honolulu, USA, a Master's in Educational Management from Universidad Andrés Bello in Chile, and a Master's in Forensic and Legal Medicine from Tech University in Spain. Dr. Gutiérrez is a retired Captain of the Chilean National Police, where he served for 18 years. He is a globally recognized forensic expert, has received awards in several countries, is the author of two books, and has been a speaker at numerous scientific conferences worldwide. He is currently an Assistant Professor of Forensic Sciences at Chaminade University of Honolulu.

Jay Amar Makwana

Cyber Risk and investigation Analyst, Maximus int, UK

Combating Child Sexual Exploitation in the Cyberworld: Forensic and Strategic Approaches to Tackling CSAM on Social Media

The rapid growth of social media and online communication platforms has unfortunately led to the proliferation of child sexual abuse material (CSAM) and related exploitation crimes. This presentation explores the evolving landscape of CSAM-related cybercrimes, focusing on how offenders use emerging technologies, encrypted channels, and social networks to exploit children and evade detection.

The talk will highlight forensic methodologies and digital investigation techniques that can aid in identifying, tracking, and prosecuting offenders while protecting victims' rights and privacy. It will also discuss the role of artificial intelligence, digital forensics, blockchain tracing, and cross-platform data sharing in combating CSAM. Furthermore, the presentation emphasises the importance of international collaboration, proactive monitoring systems, and public awareness campaigns to create a safer online environment for children.

By integrating technological innovation with ethical and legal frameworks, we can enhance global efforts to detect, disrupt, and prevent online child sexual exploitation.

Biography:

Jay Makwana is a cybersecurity and digital forensics professional with a First-Class Honours MSc in Cybercrime and Digital Investigations and a BSc in Cyber Security and Digital Forensics. Passionate about bridging the gap between technology, investigation, and human impact, Makwana has developed hands-on experience across cyber threat analysis, digital evidence handling, and open-source intelligence (OSINT). He has previously contributed to projects focused on cyber awareness, digital investigations, and operational security, including hosting a podcast series that explores the social and psychological dimensions of cybercrime. With a solid foundation in both the technical and investigative aspects of cybersecurity, Makwana is dedicated to promoting responsible digital practices and strengthening cyber resilience. His work reflects a commitment to innovation, continuous learning, and collaboration across disciplines to better understand and combat the evolving landscape of cyber threats.

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