

NYIAI EDITION

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**CRIME
SCENE
INVESTIGATION**

CRIME SCENE TECHNOLOGY NEWS



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Staffed by ex-members of the Police and Security Services (British Military) we have a wealth of knowledge and expertise in all aspects of criminal and forensic investigation and therefore fully understand the problems and difficulties encountered by our customers.

It's for this reason, that for many years, we have continued to invest in new products and services that allow our customers around the world, to detect, apprehend and prosecute those individuals who choose to live outside the law.

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Crime Scene Technology News

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CRIME SCENE TECHNOLOGY NEWS

EDITORIAL

This is the second edition of Crime Scene Technology News and the first international conference edition. The feedback from readers has been encouraging and in this issue apart from it being the New York IAI Education Conference special, we have articles submitted from the USA and UK. Also Peter Ellis the Editor of CSEye, the scenes of crime magazine of the Chartered Society of Forensic Sciences, has written an article about his experience when he joined Forensic Services in the London Metropolitan Police in the 1980s.

Jared Bradley CEO of M-Vac Systems has submitted an article outlining how M-Vac enabled a difficult case to be solved. M-Vac is a brilliant piece of American technology which is a real game changer in DNA recovery from difficult substrates and in the UK we are in conversation with Leicester University home of the Sir Alec Jeffreys DNA Institute about the use of M-Vac in research work. Jared is joining us on our stand at the conference and will be delighted to meet delegates.

This magazine publishes commercial information as well as papers and articles. It has a broad spectrum of readers located in many countries. Our policy is to publish details of new and innovative products with details of real solved cases.

It has been a pleasure since launching the magazine in July 2015, to receive articles, advertisements and notices from academia, scientific societies, forensic practitioners and others. Thus far the evidence is that there is a place for a commercially based magazine, which is also prepared to support those involved in forensic societies at low cost.

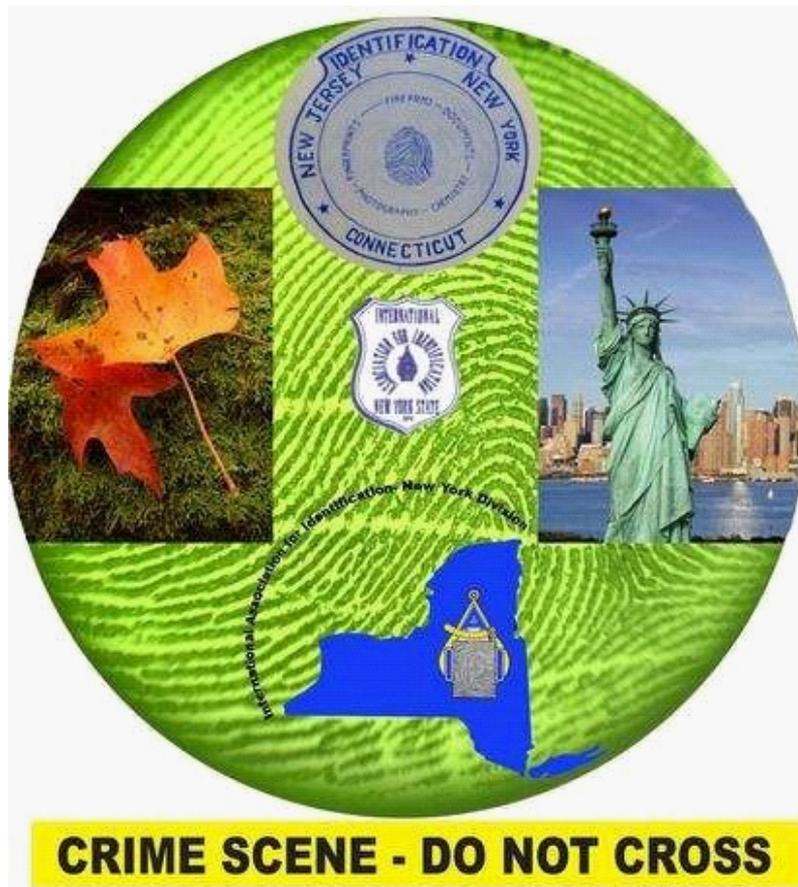
It has always been the mission of CSI Ltd to supply products and systems aimed at detecting criminals and reducing crime. The company has been involved for many years with the international forensic community and we are members of the IAI, CSFS, Fingerprint Society, IAAI and the UK-AFI, the directors and staff all having served in the police or military.

We send best wishes to all our readers and the delegates of the NYIAI Educational Conference 2015.

Kindest regards,



Bob Milne Editor and Grahame Sandling Director CSI Ltd.



New York Division of the International Association for Identification

2015 Educational Conference

Crowne Plaza Hotel, Syracuse, NY

October 9-11, 2015

Visit us online at www.nyiai.org for more information

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Welcome to the 2015 educational conference of the New York Division of the International Association for Identification! The New York Division has seen a lot of changes again this year, and the highlight is the educational conference. This year we return to Syracuse to continue to the success we achieved at last year's conference! We have many new lectures and workshops this year, along with an extended vendor area and business meeting. At the cocktail reception Friday evening we will open a gallery of exhibits taken by the Forensic Photography students, arranged by NYIAI 2nd Vice President Cathryn Lahm, which will remain on display in the vendor area through to the conclusion of the banquet Saturday evening. At our banquet this year we are honored to have Mr. Steven Johnson, the 2014-2015 IAI President as our special guest!

Our mission at the conference is to give all of our attendees a chance to gain some experience and knowledge through the program that will be offered. As a part of our continued collaboration with the other IAI Divisions and organizations, we are welcoming **all members** of the various IAI Divisions as our own this year! As always, thank you for your support of the New York Division this year, and we welcome any feedback you may have regarding the conference or the Division at large.

An important initiative for the New York Division is to increase the involvement of students that are pursuing a degree to enter into the forensic science or investigative field. Last year's conference was a great success in no small part to the participation of our student body. We have offered our students an opportunity to attend the conference to gain some experience and knowledge of the forensic settings. I welcome all students to attend our conference this year, and encourage our attendees to speak with the students and continue their education through the experience gained in the field.

The officers and I welcome your participation at this year's conference, and invite you to take full advantage of the program that is being offered. Please visit our exhibitor area on Friday and Saturday to take advantage of the programs and services that they can provide to your agency. I encourage you to speak with them and see what they have to offer! Our hope is that you enjoy the program that the Division has prepared, and leave the conference in possession of new ideas and knowledge to return to your agencies. If at any time, you have questions about the schedule or locations, please contact us, or ask one of the volunteers at the event.

Thank you,

Andrew Reitnauer President



Accommodations:

The 2015 New York Division of the IAI Conference will be held at the Crowne Plaza Hotel in Syracuse, NY from October 9-11, 2015. The hotel has offered the Division a discounted room rate for reservations, and will be hosting many of the social events throughout the conference. Attendees may reserve a (1) bed king room or (2) double beds room at a rate of \$119 per night. Reservations may be made by calling the hotel at (866) 305-4134, and mention the block code of "New York Division of the IAI". All Parking fees have been waived by the Crowne Plaza for the conference attendees. The Crowne Plaza has also set up a specific weblink for online reservations. Please copy this address into your browser for reservations:

<http://www.crowneplaza.com/redirect?path=hd&brandCode=cp&localeCode=en®ionCode=1&hotelCode=SYRCP&PMID=99801505&GPC=IAI>

Please visit their website at www.cpsyracuse.com for additional information. When reserving, you must inform the hotel reservation that you are attending the New York Division Conference.

Hotel Information:

The registration for both accommodations and the conference events will be held at the Crowne Plaza. In addition to registration, the Syracuse Area Visitor's Bureau will be on site to assist the attendees with any information regarding directions, places to visit, area information, and more. The Crowne Plaza will also be supplying some transportation for the conference to and from Syracuse University. A schedule will be provided upon check in, and can be found in the lobby area.

The hotel lists several amenities to its guests that include:

- **276 Luxury Rooms and 3 Spacious Suites**
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- **Internet Access**
- **Airport Shuttle Service**
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Locations:

Upon registration, attendees will be given a list of events and locations occurring throughout the duration of the conference. In addition, every morning a schedule will be posted in the hotel lobby for your information.



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2015 Conference Registration

Also available online at www.nyiai.org/onlineregistration.html

The educational conference will be two (2) class sessions running concurrently. All attendees are welcome in any session, and we request that you sign in at the beginning of class. There will also be an asterisk (*) on this form to indicate a limited number of participants. These workshops will be filled on a first come, first serve basis.

There are both lectures and workshops available. Workshops may have limited seating, and the status of the class will be listed at the beginning of each day. During each day of the conference, there will be more than one session running concurrently focusing on a different topic. Each morning a schedule of events and daily information will be posted in the lobby.

There are several options for those in attendance. These fees can be paid online, or via USPS mail. The online registration will also have links to the various registrations, payable through PayPal.

Students: \$100 (three days), Students may register for the conference at any time. If indicated on the registration form, a waitlist will be compiled on a first come, first serve basis for acceptance to workshops. This year the registration fee will include attendance at both the cocktail social Friday evening and the Divisional banquet on Saturday. A single day attendance rate of \$50 is also available and does include attendance at a social event, if on the same day as registration. We also encourage our student attendees to volunteer during the conference. Please email NYIAIConference@gmail.com if you are willing to assist us, and indicate what time(s) you may be available.

New York Division Members: \$150 (three days), Members may register for any workshops that they wish to attend. In addition, a full conference registration includes the opening night reception and the student poster session. **All IAI Division members may register as a member at this year's conference.** A single day attendance rate of \$60 per day is also available to Division Members. The single day rate does include admittance to the social events, if on the same day of registration.

Non-Division Members: \$200 (three days), Non- Members may register for any workshops that they wish to attend. In addition, a full conference registration includes the cocktail reception and the Divisional banquet. A single day attendance rate of \$75 per day is also available to Non-Division Members. The single day rate does include admittance to the social sessions, if on the same day of registration.

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Schedule of Events

Thursday, October 8, 2015

Upon check in at the Crowne Plaza Hotel, we will have some preliminary information available for you. In addition, the New York Division will have a registration table available from 6:00-8:00. Vendors may also begin their setup. Members of the New York Division and guests are welcome to visit the Library Lounge in the hotel for a “meet and greet” session.

Friday, October 9, 2015

7:00AM- 8:00PM: Registration area will be open in the Cazenovia Room.
New York

Division Merchandise will be available for purchase.

7:00AM - 8:00AM: Breakfast and Opening Meeting in the. Continental Breakfast will be available.

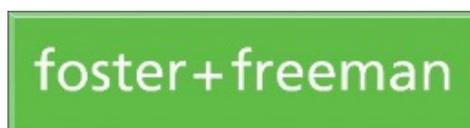
Meeting will begin at 8:00AM Sponsored by Syracuse University



8:00AM-11:00AM: Macro Photography Using Lighting, Alternate Light Sources and Filters,
presented by Cathryn Lahm and Andrew Reitnauer. Sponsored by Foster Freeman.

8:00AM-12:00PM: National Missing and Unidentified Persons System (NamUS) Presentation, Presented by Ronald Brunelli.

11:00AM-1:00 PM: Bloodstain Detection on Fabrics Using an Alternate Light Source, presented by Craig Moore. Sponsored by Foster Freeman



12:00PM-1:00PM: Jack the Ripper: A Crime Analyst's View, Presented by Robert Milne

1:00PM-2:00PM: Lunch on your own

2:00PM-5:00PM: Deciphering Latent Print Distortion, presented by David Tate and Jesse Eller. Sponsored by AZ Forensic Associates



2:00PM-3:00PM: Impression Evidence, presented by Jennifer Tripoli

3:00PM-5:00PM: Forensic Document Examination, presented by Jeffery Lubert

5:00PM-6:00PM: Open Vendor Area

6:00PM-8:00PM: Student Forensic Photography Gallery and Cocktail Social

Saturday, October 10, 2014:

7:00AM-8:00AM: Continental Breakfast

8:00AM-11:00AM: Error Detection and Management in Forensic Digital Imaging, presented by David "Ski" Witzke. Sponsored by Foray Technologies.



8:00AM-10:00AM: Crime Scene Processing, Presented by Jennifer Tripoli and Jeffery Lubert

10:00AM-11:00AM: Forensic Art, presented by Danielle Gruttadaurio

11:00AM-12:00PM: Vendor Break. Sponsored by Foray Technologies.



- 12:00PM-1:00PM: Lunch on your own
- 1:00PM-5:00PM: Obtaining Suitable Quality Exemplars from Compromised Friction Ridge Skin, presented by Linda Manigault and Dennis Percopo.
- 1:00PM-3:00PM: Bias within Latent Print Examination, presented by John Carey and Eric Smith.
- 3:00PM-5:00PM: Electrostatic techniques in the finding and recovery of dust marks, Presented by Grahame Sandling. Sponsored by CSI Equipment Ltd.



- 5:30PM-6:00PM: New York Division Business Meeting
- 6:00PM-9:00PM: New York Division banquet, Guest Speaker Steven Johnson.

Sunday, October 11, 2015:

- 9:00AM-11:00AM: Latent Print Comparisons, Presented by Janet Hoin and Bonnie Eden
- 9:00AM-12:00PM: Digital Imaging Tips and Techniques, presented by David "Ski" Witzke. Sponsored by Foray Technologies



- 11:00AM-12:00PM: The Recovery and Development of Latent Finger prints from Non-Porous Objects Found in Snow, presented by Samuel McCook.
- 12:00PM-1:00PM: Recovery of Latent Prints on Human Skin, presented by Edina Djokic.

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Course Descriptions:

Macro Photography Using Lighting, Alternate Light Sources and Filters, presented by Cathryn Lahm and Andrew Reitnauer

Session Abstract:

This class will present the properties of macro photography within forensic science. Students will be introduced to the primary compositional factors of an evidentiary image, and their proper usage, to include the primary lighting techniques under macro conditions. The principles of alternate light sources and their ability to visualize biological staining and chemical reagents will be discussed in relation to the primary color wheel, and choice of appropriate color barrier filter. Digital imaging enhancement techniques will also be discussed for these types of images.

The National Missing and Unidentified Persons System (NamUs), Ronald A. Brunelli, F-ABMDI

Session Abstract:

After attending this presentation, attendees will understand how to use the National Missing and Unidentified Persons System (NamUs). NamUs is a free federal online repository of missing and unidentified person that can be used by public, law enforcement, examiners and coroners to help solve our Nation's "Silent Mass Disaster". Presented will be an overview of NamUs. Also presented will be cases examples of the success the Onondaga County Medical Examiner's Office (Syracuse, NY) had with NamUs in bringing a name to the unidentified. It will be stressed the importance that not knowing the status of missing loved ones has a negative psychological effect on families. Also, discussed how not knowing the status of a missing person or the unidentified impedes law enforcement investigation. The consistent use of NamUs with MEO unidentified human remains could potentially increase the rate of identification.

Detecting Bloodstains on Fabric Using and Alternate Light Source, presented by Craig Moore

Session Abstract:

A brief overall review of fabric makeup will bring the attendee into a collection of unusual and difficult red and black color combinations of blended fibers and textured weaves. To the contrary, anyone can see a bloodstain on white fabric, such as the smooth linen found of a 100% cotton shirt. However, the ability to discern a transfer pattern from an impact pattern is the real test for the analyst. Time and time again highly acclaimed experts in the field of Bloodstain Pattern Analysis become pitted against one another over their interpretation of these very pattern types. First with the use of ALS and later magnification it may be possible to determine the bloodstain patterns present. This workshop is designed to educate the attendee on approaches that can be utilized in both the field and in the lab with the examinations of cloth items for potential bloodstain evidence.

Jack the Ripper a crime analyst's view, presented by Robert Milne

Session abstract:

An in depth intelligence analysis of the 1880s serial murder cases using modern techniques of victim profiling, suspect profiling and the use of Dragnet a modern geographical profiling tool. Potentially useful exhibits are identified and discussed, which could have progressed the case. Photographs of the real locations 19th century mappings and details of the journey to crime of the victims and potential suspects leading to two locations and one individual who stands far above the others as the main suspect leading to his trial and execution in 1903 for murdering three of his common law wives.

Continued.

A trained surgeon's assistant from Poland who was located at both properties in Whitechapel near murder victims crime scenes. Further the crime mapping anchor points for two other suspects are reviewed against 19th Century maps. There are details of living descendants of people involved in the case with the family stories and hitherto unpublished photograph from 1888 until this year. There is a PDF hand out for interested members of the audience with scanned handwritten reports from amongst others Inspector Abberline, DCI Donald Swanson and scans of the main Ripper Letters with a copy of the presenter's article dated March 2014, entitled 'Jack the Ripper – What Have We Learned? Which was published in the on line publication of The Forensic Science Society 'CS Eye'. The presentation also cover a review of the DNA results of the shawl in the Catherine Eddowes case.

(Nb Bob really was the Head of Scenes of Crime Whitechapel 1977 to 1981 returning to deal with homicide in the same area 1994 to 2002 at the North London Forensic Science Support Unit).

Deciphering Latent Print Distortion, presented by David Tate and Jesse Eller

Session Abstract:

Capped at 15, this class targets both the novice and experienced examiner. Various types of distortion will be reviewed and discussed but largely this workshop aims to provide hands-on learning through the creation of distorted latent prints from various substrates and matrices with live feedback and group discussion.

Impression Evidence, Presented by Jennifer Tripoli

Session Abstract:

This lecture is directed towards students and examiners new to the field. It will introduce the attendees to Impression Evidence, more specifically, footwear and tire track impression evidence. The lecture will be a basic overview of the recognition of impression evidence, documentation, collection techniques and forensic analysis of questioned impressions.

Forensic Document Examination, Presented by Jeffery Luber

Session Abstract:

The forensic discipline of Forensic Document Examination is usually thought of as "just" handwriting, but it is so much more. The lecture today will present the audience with the various sub disciplines in the area of document examination. Topics such as "secret identifier codes" in color toner printing, paper optical brighteners, non-destructive ink differentiation, thin layer chromatography of inks, paper physical match, indented writing as well as handwriting and signature identification/ elimination will be discussed. The attendees will gain a more in-depth understanding of the field of Forensic Document Examination.

Error Detection and Management in Forensic Digital Imaging, Presented by David "Ski" Witzke

Session Abstract:

Error Management in Forensic Digital Imaging Should be a Resolution for the Forensic Science Community By David "Ski" Menor Witzke Vice President, Program Management Foray Technologies

When judgments are made under uncertainty, two general types of errors are possible—false positives and false negatives. A decision maker cannot simultaneously minimize both errors because decreasing the likelihood of one error necessarily increases the likelihood of the other (Green & Swets, 1966). Within the criminal justice community, there are a lot of judgments – conclusions – that are made under uncertainty. These judgments can result in the misidentification or missed identification of a fingerprint, a footwear impression or a questioned document as well as the inability to analyze characteristics in video images, such as the letters or numbers of a license plate. The reason for uncertainty in almost every one of these cases can be attributed to a lack of image resolution, improper use of image file formats, or the lack of standards. For example, when a footwear impression is captured with a resolution that is too low, it is impossible to enlarge the image sufficiently to make a reasonable conclusion about characteristics such as wear patterns or other unique characteristics. In addition, low resolution can blur the image with the background (substrate) upon which the impression was made. Failing to follow standards, such as including a scale, can prevent the image from being calibrated properly. Or, was the scale on the same plane as the impression? Was a tripod used or was the camera hand-held? Other artifacts can be introduced into the image using a compression algorithm, such as a JPG file format. While image compression should not be used for digital images that will be used for comparison, many agencies require their officers to compress images as much as possible so that they can get more images on the memory card in the camera. In far, far too many instances, the artifacts created by image compression significantly affect image quality, which in turn affects the ability to make a judgment with any degree of certainty. It is imperative that standards be in place to ensure not only reliable image quality, but to ensure consistency of clarity and detail. In digital imaging technologies, image resolution is the key factor in image quality. The level of detail can be increased with the use of color or, more specifically, the bit depth of color. Image quality together with image detail provides better clarity and thus, a higher degree of certainty. Most high-end digital SLR cameras today capture image detail with a bit depth of 12 or 14 bits – a dynamic range 4096 different contrast values (shades) or 16,384 different contrast values (shades). However, this dynamic range can be significantly reduced to only 256 different contrast values when using a file format, such as JPG or TIF when storing images on a digital camera. Once this detail is lost inside the camera, it can never be restored to the original values captured with the imaging sensor. While proper training will not solve all of the issues and remove all of the uncertainty, it is a very good place to start.

Crime Scene Processing, presented by Jennifer Tripoli and Jeffery Luber

Session Abstract:

The lecture will be geared towards students and analysts new to the Forensic field. It will be an overview of Crime Scene Processing including the Recognition, Documentation, and Preservation of Physical Evidence. The lecture will give the students and analysts an insight into the systematic approach used at scenes. There will be general theory and case examples discussed.

Forensic Art, presented by Danielle Gruttadaurio

Session Abstract:

This presentation will explore the role of a Forensic Artist and the techniques one can provide to assist law enforcement with criminal investigations. We are going to discuss interviewing a victim and/or witness for composite imaging, 2D & 3D facial reconstruction/approximation of the human skull, post mortem composites, adult age progression as well as facial recognition software to help identify subjects.

Obtaining Suitable Quality Exemplars from Compromised Friction Ridge Skin, presented by Linda Manigault and Dennis Percopo

Session Abstract:

This workshop will focus on the fundamentals of fingerprints in the identification of missing and unknown deceased persons. The instructors will discuss various types of conditions and challenges often seen in a postmortem setting, as well as the methods/ techniques used for the acquisition, preservation, and submission of suitable quality friction ridge detail from human remains. Outline: Part I: Introduction to Fingerprint Identification and their use for Identifying Missing and Unknown Deceased Persons. Part II: Acquisition - Safety Guidelines, Basic & Advanced Methods/ Techniques. Part III: Preservation - (Imaging Methods/ Techniques, Image Quality Standards) Part IV: Submission/ Due Diligence - Latent vs. Ten-print Searches, Existing Databases & Available Resources. Note: Attendees should have a basic working knowledge of fingerprints and handling human remains.

Bias in Latent Print Examination, presented by John Carey and Eric Smith

Session Abstract:

Errors in friction skin identification can have far reaching and lasting implications, not only regarding the cases from which they originate, but throughout the forensic and judicial communities. Studies have indicated that bias can influence examiner decisions and contribute to the potential for error. We will discuss types of error relevant to friction skin evidence examination, with a focus on bias and how it can enter the examination process. *Continued.*

Studies regarding the influence of bias will be highlighted and we will offer some suggestions on the mitigation of its effects.

Electrostatic techniques in the finding and recovery of dust marks, presented by Grahame Sandling

Session Abstract:

Bob Milne is the inventor of the modern wireless electrostatic lifting device (ESL) the Pathfinder, manufactured by CSI Equipment, which is copied in other similar devices available today.

The techniques of using ESL devices are covered with a full explanation of the science behind the technique. Those attending will be able to be instructed in a practical way to fully make use of this most useful technique. Several ESL devices are supplied with all of the evidence recovery and preservation materials.

Digital Imaging Tips and Techniques, Presented by David "Ski" Witzke

Session Abstract: After completing this program, the class participants will have a basic understanding of Adobe® Photoshop® CC. In particular, the attendees will have a working knowledge of the tools and techniques required for forensic digital imaging processing and how those concepts can aid in the analysis, comparison and identification process. This is a “hands-on” training program; all students will participate in a “practical application” exercises. Students must bring a laptop PC to class.

The following is a brief outline of the topics that will be taught in this four-hour training program.

1. Adobe Photoshop Overview
 - a. Setting up preferences for forensic imaging
 2. Understanding image resolution:
image (file) resolution versus display resolution versus output resolution
 - i. Calibrating images for 1:1 output
 - ii. Creating composites
 - b. Using color for suppression of backgrounds
 - c. Selecting an “area of interest” for processing
3. Image Enhancement Techniques and Processes
 - a. Enhancement Techniques for creating contrast:
 - i. Black & White
 - ii. Levels
 - iii. Curves
 - iv. Shadows/Highlights

- b. Suppressing backgrounds with Calculations
- c. Using filters to suppress noise
 - i. Noise > Dust and Scratches feature
 - ii. Sharpen > Sharpen and Unsharp Mask options
- d. Adjusting image orientation (rotation) while mitigating artifacts

SYSTEM REQUIREMENTS:

- Ø The minimum acceptable system requirements running Microsoft Windows 7 are:
- Ø Intel® Core 2 or AMD Athlon® 64 processor; 2 GHz or faster processor
- Ø Microsoft Windows 7 with Service Pack 1
- Ø 2 GB of RAM (8 GB recommended)
- Ø 2 GB of available hard-disk space for 32-bit installation; additional free space required during installation (cannot install on removable flash storage devices)
- Ø 1024x768 display (1280x800 recommended) with 16-bit color and 512 MB of VRAM (1 GB recommended)
- Ø OpenGL 2.0–capable system
- Ø Internet connection and registration are necessary for required software activation, validation of subscriptions, and access to online services.**

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NOTE: *A free, 30-day trial version of the software may be downloaded from the Adobe website. You will still be required to activate the trial version using an internet connection Adobe ID and acceptance of license agreement. The trial version should NOT be downloaded more than two weeks prior to the start of the NYIAI meeting.*

Latent Print Comparison, Presented by Janet Hoin and Bonnie Eden

Session Abstract:

The latent print comparison discipline is a discipline which has been around for over 100 years. The technology of automated fingerprint systems has increased the ability of the latent print examiner to identify latent prints processed from crime scenes. This training will assist the student with the necessary tools to make a successful comparison and sound conclusions.

The information covered in the presentation are pattern types, three levels of detail, orientation and clues to make comparisons of latent prints efficiently and successfully. The student will then apply all the information received from the power point presentation with latent print workshops. The student will have time to make the comparisons and the answers will be reviewed with the class.

The Recovery and Development of Latent Fingerprints from Non-Porous Objects Found in Snow, presented by Samuel McCook

Session Abstract:

The aim of this study is to investigate what affects snow and cold weather have on the recovery and subsequent development of latent fingerprints from non-porous objects that are found in outdoor winter conditions. Specifically, this study uses a variety of experimental groups (nine including a control group) to further examine these affects. Based on a review of the literature this will be one of the first experiments that will investigate what affects snow and frigid weather has on latent fingerprints. It has already been shown through a variety of research studies that “finger marks on surfaces can be developed even after having been exposed to water for at least one week”(1). The research of this study will build on knowledge that has already been gained from experiments involving latent fingerprint recovery from aquatic environments. The vast majority of United States agencies have acknowledged, “processes do exist to recover fingerprints on wet or previously wetted items”(2). Given that the surfaces on which the latent fingerprints were deposited in this experiment had a chance to dry, they were processed with Cyanoacrylate Ester (Superglue) and Rhodamine 6G , versus Small Particle Reagent (SPR) that is typically reserved for use on surfaces that are still saturated with moisture. This study suggests a need for further examination of latent fingerprints found in snow and winter conditions.

Recovery of Latent Prints on Human Skin, presented by Edina Djokic

Session Abstract:

A literature review of published articles pertaining to the recovery of latent prints on human skin. Current methods for recovering latent prints from suitable surfaces as well as methods for recovery on human skin will be discussed. This presentation will provide a basic understanding on the recovery of latent prints on human skin and the composition of latent print residue. Obtaining latent prints from living human skin is lacking, thus, future directions on targeting specific inorganic compounds in latent print residue will be discussed.

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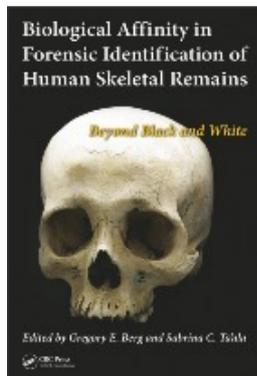
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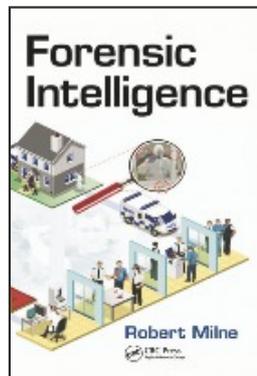
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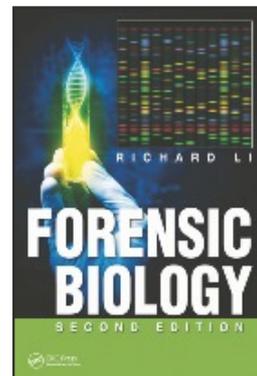
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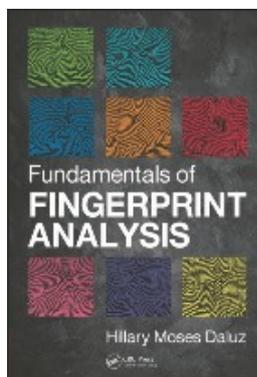
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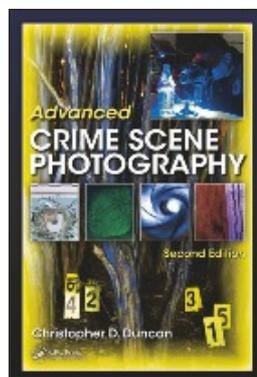
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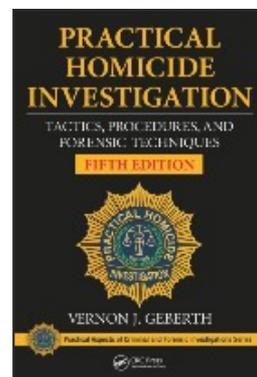
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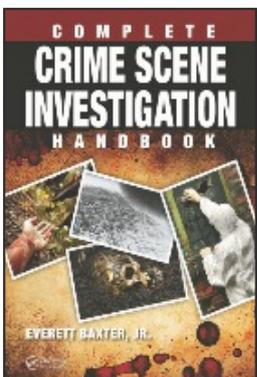
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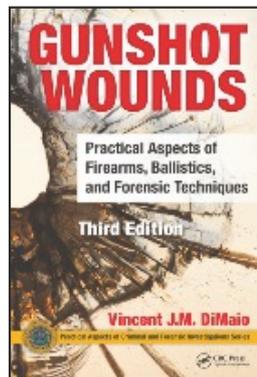
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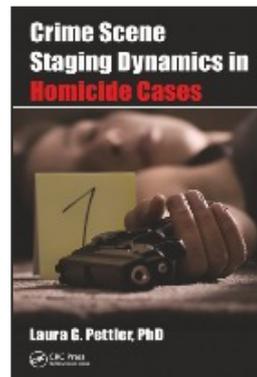
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If You Can't Collect It, You Can't Detect It

Jared BRADLEY CEO of M-Vac Systems, looks at a recent case in the USA, solved using M-Vac.



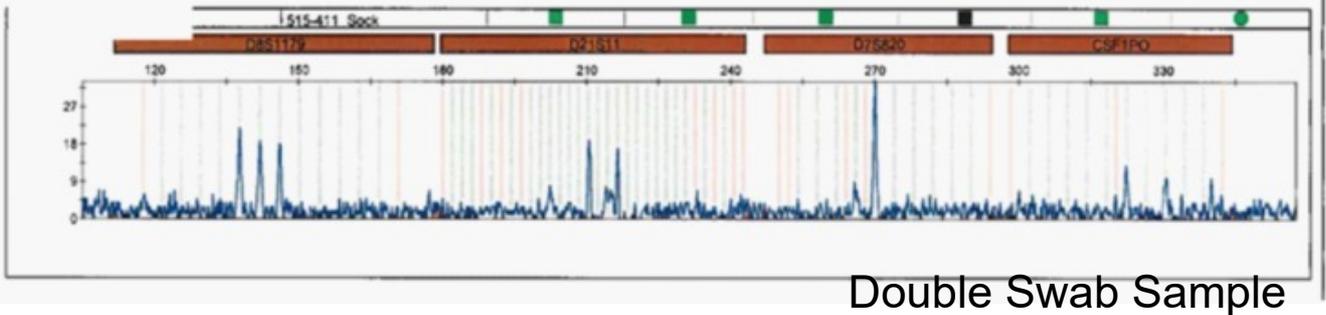
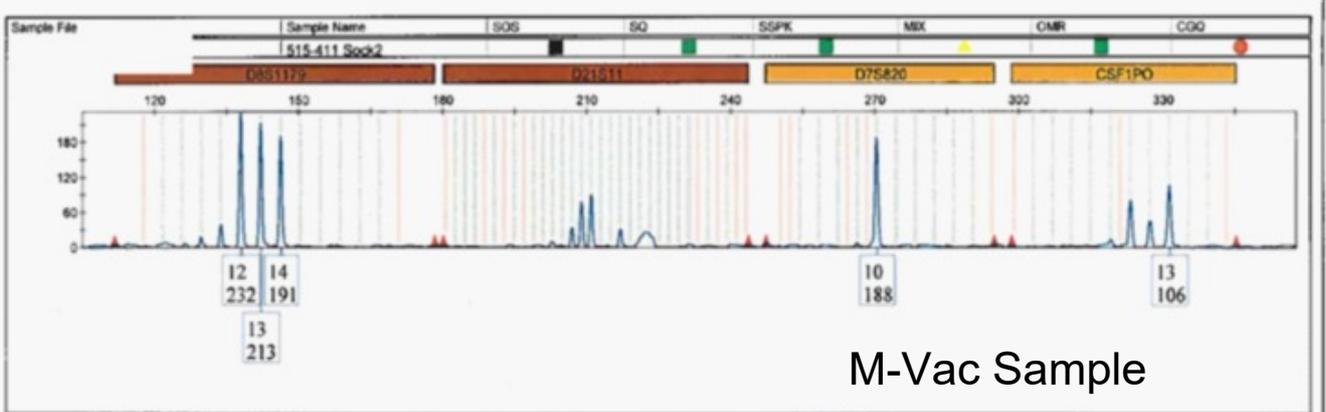
Not long ago a good friend, who is also a detective in one of the largest sheriff offices in the US, described the desperate circumstances one of his cases was in and what he had to do in order to move it forward. A young woman had been brutally murdered by a heavy, blunt object and found in her yard along with tools that indicated the person who had killed her also planned on disposing of her body. Most likely the suspect had just run out of time or he would have completed his grisly intentions.

The detective and his team had a suspect under surveillance and based on all the circumstantial evidence they were confident the suspect had committed the heinous crime, but due to a lack of hard evidence, particularly DNA linking the suspect to the murder weapons, they were unable to file charges. To make matters worse, the judge overseeing the investigation had given the investigators a time limit on how long they could keep the suspect under surveillance and that time was quickly running out.

How can touch DNA be effectively collected off of a rough and porous surface? That was the question that had to be answered. The swabbing technique had been ineffective despite multiple tries, and the other methods could not penetrate the hard, porous surface. The detectives knew the suspects DNA was likely on the object, but how to actually collect it off of the surface constituted a major problem.

Fortunately, the detective was doggedly determined, information is increasingly abundant and searchable, and even small businesses can have a big presence on the Internet. He was able to find several articles on a new wet-vacuum collection device called the M-Vac System. Almost immediately he knew it was the only possibility for getting that DNA off of the evidence. That's when he called me and we arranged to get an M-Vac System to him and help in the case. Within a relatively short amount of time the M-Vac had collected the touch DNA material off of the murder weapon, the lab had processed it and the suspect's DNA profile was generated.

Due to the hard work of the investigative team, that suspect is now off the streets waiting for trial instead of being out on the streets further terrorizing the community.



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Thoughts from the frontline, past and present

by Peter Ellis MCSFS Editor of CSEye Magazine.

In this series of articles we hope that by sharing the experiences of CSIs and SIOs on the job we can develop a body of knowledge from what has gone before. Here Peter Ellis shares some thoughts on his own past experiences of working within the crime scene investigation community.

“No, our science is no illusion. But an illusion it would be to suppose that what science cannot give us we can get elsewhere.” [Sigmund Freud, *The Future of an Illusion \(The Standard Edition\)* 1927.](#)



I began my career as a Scenes of Crime Officer in 1980 and was attached to a busy inner London Police Station. To put a historical perspective to this time Margret Thatcher had just been elected as Prime Minister, West Ham had beaten Arsenal one nil to win the FA Cup, and Mary Hopkins topped the music charts with “Those were the days”. Times were changing and policing was fast becoming a fixed point on the political agenda with growing demands for greater scrutiny and accountability. In 1981 serious civil unrest occurred across many major cities in England, with serious rioting in [London](#), [Birmingham](#), [Leeds](#), and [Liverpool](#). In London disturbances occurred in Brixton, Dalston, [Stoke Newington](#), [Clapham](#), [Hounslow](#) and [Acton](#). Research identified the relationship between the police and local ethnic communities as a significant factor with the police viewed as symbols of white authority and state racism.



Following Lord Scarman's report on the Brixton riots a new code for police behaviour was introduced through the [Police and Criminal Evidence Act 1984](#). The independent [Police Complaints Authority](#) was established in 1985 in an attempt to restore public confidence in the police. The legislation, technology, and organizational policies introduced were designed to encourage an ethical approach to policing. This new era further enhanced the demand for accountability and the need for scientific evidence to support criminal investigation and prosecutions.

Research has found Police culture to be complex with various levels and sub-cultures that in common with many forms of organisational culture have been shown to be resilient to change. However, In accordance with national training policy investigating officers moved away from perceived coercion and interrogation towards a more cooperative and investigative approach to interviewing through which forensic evidence increasingly provided independent corroboration. However, during the transitional period it was often necessary to reiterate that forensic evidence retained from the crime scene had the potential both to implicate and eliminate a suspect.

A strong team culture has always existed within policing. Groups often establish and maintain both formal and informal boundaries that contribute towards controlling, shaping and influencing group members. This form of control can result in conformity through groupthink where members go along with the group even if they privately disagree with the group's consensus. Any challenge to conformity could be perceived as a threat to established values, beliefs, behaviour patterns, and group cohesion. This was particularly relevant in the 1980s when policing was being subjected extreme levels of scrutiny and challenge.

It was then and still is today critical that scenes of crime officers retain professional integrity and independence with actions, decisions, and rationales based on the analysis of known facts, observations, and the interpretation of the crime scene and available sources of evidence.

However, the concept of intuition cannot be ignored within the complexity of a crime scene and all factors, even the more abstract, should be considered within the decision making process. I would like to give a personal illustration of a case where intuition had a significant impact on my decisions and consequently the final outcome of the case. The case was initially classified as aggravated burglary where the victim had fallen from a window whilst trying to escape from those issuing threats as they forced open the front door to the flat. I had been advised that the victim had been detained in hospital but the injuries received were minor and that he was expected to make a full recovery and was to be discharged within days. No suspects had been detained, and I had made two unsuccessful attempts to gain entry to the premises to examine the crime scene.

Several days after the offence I was approached by the investigating officer and it was agreed that we would attend the premises remove the boarding securing the front door and examine the crime scene. It was not a good day, the workload was high and I was already committed to attend numerous other crime scenes, including scenes relating to both arson and armed robbery offences. Removal of boarding revealed significant force had been applied to the front door and the premises had been searched. After conducting a preliminary examination I concluded that an extensive examination of the scene would be conducted with full scene photography. I requested the attendance of a photographer and liaised with colleagues to rearrange my workload. The examination was conducted to an extent possibly beyond a level that would have been considered appropriate by many taking into account the circumstances of the case and workload commitments. However, intuition dictated that I should make this particular crime scene my top priority.

During my examination I examined the damaged front door and developed numerous shoe marks of evidential value. The shoe marks were photographed and lifted with adhesive sheets. I then made the decision to saw the door in half and retain the damaged section bearing the shoe marks. This was to be the only occasion within my career that I had opted to saw a door in half. A blend of rational intuition and analysis had contributed to my decision making relating to prioritisation of the examination in preference to other serious incidents, extent of the examination conducted, use of full scene photography, and to saw the door in half and retain the section bearing shoe marks. . I was informed the following day that the victim had died from his injuries and that a team would be formed to investigate the case.

Finger marks found inside the premises were identified and shoe marks from the door were matched to a pair of trainers belonging to the suspect. The sawn section of the door was presented at court, the damage and the large number of shoe marks on the door were able to demonstrate the level of force used to gain entry to the premises. Forensic evidence retained from the crime scene contributed significantly to the conviction of the accused at the Old Bailey, Central Criminal Court, London for manslaughter.

Forensic evidence provided support in a tangible format that could withstand scrutiny and challenge. As a consequence, scenes of crime officers attended court and presented evidence on a regular basis in support of criminal prosecutions across a wide spectrum of offences. This provided a greater understanding of the criminal investigation process, the contribution made by forensic science, and also its limitations. Another significant factor was that increased involvement in the criminal justice process enabled scenes of crime officers to develop an understanding of the bigger picture when examining crime scenes through awareness as to what would be required by the courts. In my opinion regular court attendance and the presentation of evidence serves to improve the standard of both crime scene examination and documentation. The knowledge and experience gained impacted upon both interactions with investigating officers and actions, decisions, and rationales at the crime scene. For many the potential for all aspect of your crime scene examination to be scrutinised by a skilled barrister in open court had a far greater impact than many local quality assurance procedures.

During the 1980s the number of operational scenes of crime officers was relatively low and consequently individual workload was high. Certainly in busy inner London areas this resulted in a high level of autonomy for the individual and involvement in a wide spectrum of crime. This enabled many officers to quickly build high levels of skill and experience with the ability to deal with most situations encountered. This enabled individual scenes of crime officers to speak with professional authority both within their interactions with investigating officers and when presenting evidence at court. Professional integrity and authority enabled scenes of crime officers to maintain independence within their decision making and to withstand external pressures and influences.



There have been significant changes since the 1980s both in working practices at the crime scene and in the advancement of forensic science. The introduction and evidential value of DNA, along with an ever increasing level of sensitivity, reflects the growth in standard operating procedures introduced to control and regulate crime scene examinations. The development of an improved and structured approach to supervision, tasking, and working practices was essential to ensure evidential integrity in accordance with the advancement of forensic science. Whilst the same principles apply, the retention of blood from a crime scene for grouping purposes in the 1980s can appear almost simplistic when compared to the contamination prevention measures applied to the retention of samples for DNA analysis today. The progress made within the field of forensic science may be reflected through comparison of the evidential limitations of blood grouping procedures that were relied upon prior to the introduction of DNA.

DNA 17 would appear to represent a major advancement and will enhance the power of DNA profiling as an investigative tool. However, it should be acknowledged that enhanced sensitivity may result in an increased potential for contamination. Many forensic practitioners would acknowledge that whilst it is possible to significantly reduce the potential for contamination it may not be possible or practicable to totally eliminate contamination. It may be questionable as to whether current working practices adopted by forensic practitioners will be appropriate and capable of meeting the new challenges provided by the hyper sensitivity of DNA profiling systems such as DNA 17. Quality assurance and compliance with standing operating procedures governing all forensic examinations will be critical in ensuring the control of contamination within a risk management approach.



Improved management, supervision, coordination, and compliance with standing operating procedures will be increasingly critical factors within the control processes governing quality assurance at crime scenes. ISO 17020 has been acknowledged as the professional standard for quality assurance for crime scene examiners.

However, whilst certain forensic science service providers have secured ISO 17020 accreditation this standard has yet to be fully implemented by major police forces nationally. External and independent quality assurance could provide a significant contribution towards ensuring the integrity and quality of both crime scene examinations and the forensic evidence secured.

Factors such as expansion of the workforce following the introduction of DNA, introduction of a 24 hour shift system, and streamlined forensic reporting have significantly impacted upon the scenes of crime officer role. The number of crime scenes examined per individual has fallen, for some the crime scenes examined relate almost exclusively to volume crime, and the need for court attendance to present evidence has been greatly reduced. Today it is not uncommon to find scenes of crime officers with several years of experience who have never presented evidence in court. The advancement of DNA sensitivity could result in DNA evidence being subjected to greater scrutiny and challenge within the courts with a high level of corroboration required in order to secure a conviction. The Court of Appeal judgement in R v Hoey (2007), relating to the Omagh bombing in 1998, established that working practices considered fit for purpose in 1998 were not appropriate to meet the demands of forensic science today. The one thing that you can guarantee for the future is change and we must adapt accordingly in order to meet the challenge.

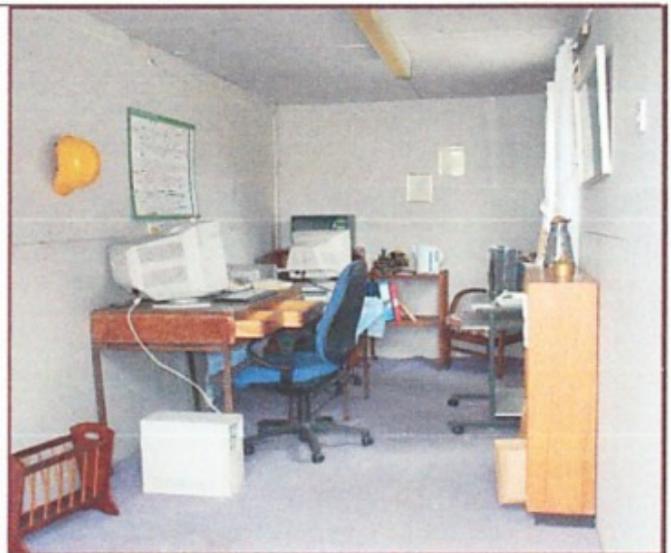
“It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.” – Charles Darwin.

The Chartered Society of Forensic Sciences new electronic publication called CS Eye (<http://csofs.org/cseye>) is now available as an e-mag. CS Eye is a quarterly magazine filled with general interest articles including cold case reviews, interviews, equipment and book reviews, latest technology research, and other news items from across the sector. This compliments the fully peer reviewed Journal [Science and Justice](#) and the members newsletter [Interfaces](#).

CS Eye has been introduced to offer a wider focus on the crime scene and the application of crime scene sciences. It is anticipated that CS Eye will be of primary interest to forensic practitioners, crime scene officers, forensic science providers, and academics associated with the examination of crime scenes and related topics.

Should you be interested in sharing your knowledge, experiences, and best practice please submit material for consideration and publishing in a future edition of CS Eye to nicola.schumacher@csofs.org

***Peter Ellis
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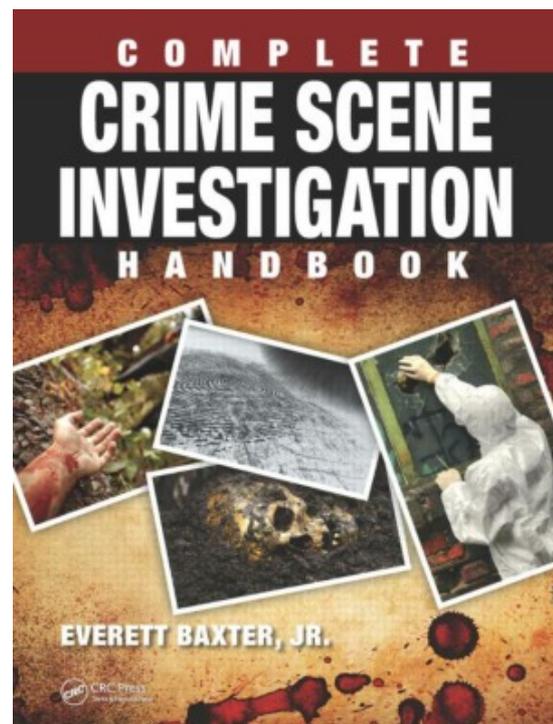
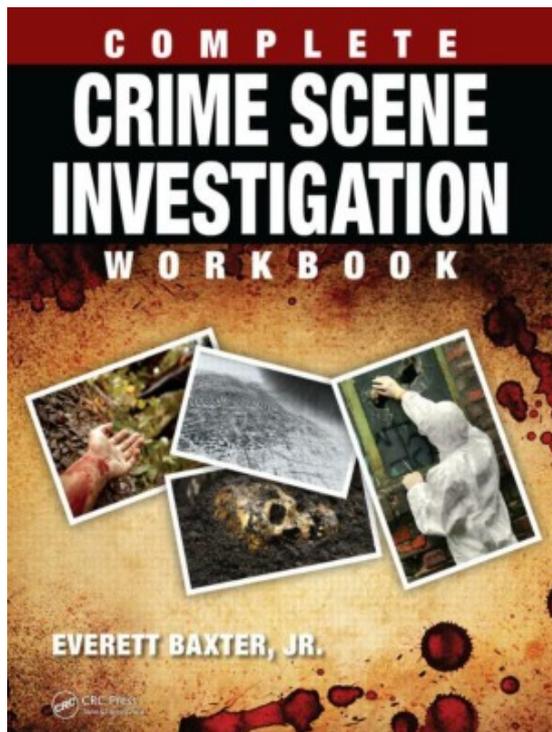
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AUTHOR INTERVIEW

Mark Listenwnik Senior Editor of Forensic Science books at CRC Press interviews Everett Baxter Jnr author of the Complete Crime Scene Investigation Handbook & the accompanying Crime Scene Investigation Workbook



ML: I'm Mark Listewnik, Senior Editor of Forensic Science books at CRC Press. We're talking with Everett Baxter, Jr.—Investigator with the Oklahoma City Police Department and author of the forthcoming books the Complete Crime Scene Investigation Handbook and the accompanying Complete Crime Scene Investigation Workbook, both due out in April of 2015.

Thank you for taking the time to talk with us, Everett.

EB: Thank you Mark, for this opportunity to discuss the books.

ML: Can you tell me who the audience you had in mind in writing the Handbook and what was the motivation to write it?

EB: When I wrote the book, I initially intended the audience to be Crime Scene Investigators. As I mentioned in the Preface of the Handbook, during my research, I came across a statistic that indicated there were some 21, 500 law enforcement agencies in the United States, 80% of these agencies being 20 person or smaller agencies. These smaller agencies often lack funding to send their investigators to training. If the agency does send an investigator, it is generally limited to one or two. Since discovering this statistic, I chose to amend my audience to reach these agencies. These agencies would be able to acquire the [Complete Crime Scene Investigation Handbook](#) and the [Complete Crime Scene investigation Workbook](#), which are resources that would be available to ALL their investigators.

Crime Scene Investigators must also communicate their processing through various reports they may write. As Crime Scene Investigators, our reports are not written for the attorney's handling the case, the audience also includes outside analysts that may review or perform some form of specialized analysis on the evidence, such as footwear examination analysis. In Sections 4 (Types of Evidence) and 5 (Specialty Considerations) I have included areas in each chapter that discusses how to identify, document and collect the evidence. The glossary is broken down into sections that correspond with the various chapters and contains terminology unique to that particular discipline. Since the terminology are recommended terms specific to the particular discipline of the section, the glossary then becomes an additional resource when writing the report to ensure you are communication properly with your intended audience

.ML: There are so many considerations to collecting and preserving evidence in a crime scene. And, really, you have one shot to collect everything, photograph everything, and really get it all right. In your experience, what are some of the biggest challenges that you can come across in properly recording and collecting the evidence?

EB: Some of the biggest challenges stems from the difference in training from the detectives and the Crime Scene Investigators. It is difficult for a detective to maintain the necessary training for their specific duty as well as the ever changing world of a Crime Scene Investigator. Detectives generally rely on their limited training on processing techniques or more senior detectives to provide guidance. Because of the nature of the detective's investigative function, it is difficult to master the working knowledge of the crime scene processing techniques. It is difficult for detectives to stay "current" with the some of the crime scene processing

The [Complete Crime Scene Investigation Handbook](#) then becomes a valuable resource for the detective to either master those techniques or provide them the insight as to other evidence that may be present at the scene and how that particular evidence may assist in the investigation. Most of the evidence we encounter at crime scenes is circumstantial evidence. Chapter 13, Trace Evidence is one example of circumstantial evidence, some of which is often overlooked at crime scenes.

ML: In your mind, what are the qualities that make a good crime scene investigator?

EB: A good Crime Scene Investigator is an individual that is very meticulous and detailed oriented, has a good working knowledge of crime scene processing techniques and can communicate effectively through the written reports and courtroom testimony. A good Crime Scene Investigator should also have a good investigative insight. An effective Crime Scene Investigator should be able to receive a briefing of the incident and techniques and technology. Since detectives generally do not master that working knowledge of crime scene processing techniques, the detectives tend to overlook or fail to consider processing and/or collecting some of the evidence. While processing the scene be able to recognize indicators of suspect / victim actions within the scene that may indicate additional areas that may require more attention and/or processing.

Whether your Crime Scene Investigator function is task specific (that is scene photographer, shooting scene documentation, bloodstain documentation, evidence technician, etc.) or your function encompasses all of the functions (where you are responsible for documenting and processing every aspect of the crime scene) while processing the crime scene, you should have a good working knowledge of the crime scene processing techniques.

ML: Now, in addition to the Handbook, you also wrote a Workbook to accompany the Handbook. What does the workbook cover and how did you envision it being used with the Handbook?

EB: As a training officer, you are tasked with providing trainees with a comprehensive training program that offers the trainees an opportunity to learn and practice the skills necessary to perform their duties as a Crime Scene Investigator. Over the years, I have provided in-house and specialized training to various law enforcement agencies.

ML: If there is anything that you want people to take away from the books, what would it be?

EB: As investigators, we are all familiar with the typical evidence we may often encounter at a crime scene such as firearms evidence, bloodstains, etc. If we do not consider the other types of evidence, we are missing the boat. The Handbook is divided into six sections and 24 total chapters that take the investigator far past this “familiar” evidence and opens our eyes to the evidence we have been overlooking. Even if you are not the investigator or detective who duties it is to processes crime scenes, the [Complete Crime Scene Investigation Handbook](#) will provide you some insight as to the evidence you have been missing and what importance that evidence has to the overall case.

Mastering the processing techniques used in the processing a crime scene is a time consuming process. To master these techniques is requires training and practice. Becoming a proficient Crime Scene Investigator is a process that takes several years. The use of the [Complete Crime Scene Investigation Handbook](#) and the [Complete Crime Scene Investigation Workbook](#), the investigator is able to learn theory of the techniques as well as the ability to practice those techniques.. These books were designed to be used in a formal training environment or may be used to independently study and practice the techniques at an individual’s own pace.



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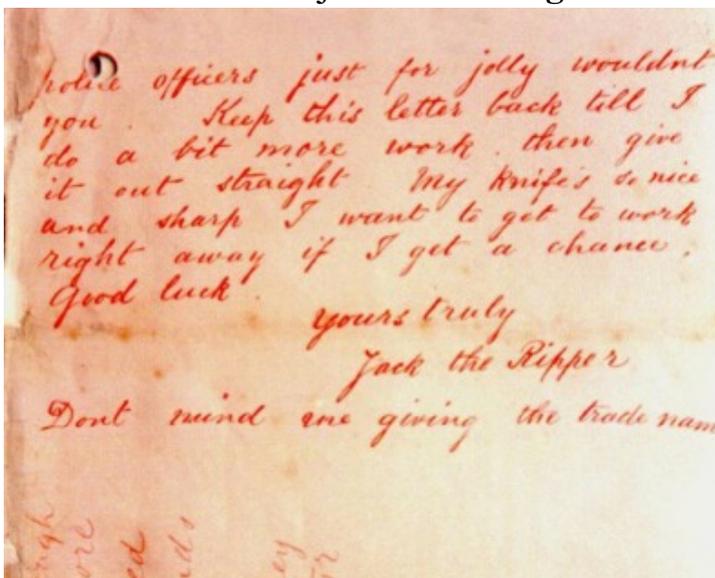


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These meetings have a guest speaker – see speakers page for details of forthcoming speakers.

Entry free to members and £5.00 to guests (join on the night and admission is free).

Interim meetings

These take place in alternate months – the first Saturday of January, March, May, July, September and November.

These meetings take place at The White Hart pub on Whitechapel High Street and are a more informal social evening, sharing a drink and good conversation.

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