THE IDENTIFIER

https://www.istockphoto.com/photo/four-used-nine-millimeter-pistol-sleeves-lying-in-the-snow-gm1300968019-393131024

INSIDE THIS ISSUE

LETTER FROM THE PRESIDENT

Dear SCIAI Members,

I hope you all enjoyed the holidays and are ready to ring in 2025! Our Presidential election is over and so are the commercials! LOL! I want to thank each of the members, board members, and colleagues that have welcomed this newcomer with open arms. I cannot express how much it means to me to feel so accepted. Even though I was born here in SC, I have lived most of my life in Florida. When I retired, I wanted to return to my roots, and I am so happy I did. Life is much better here. The pace is not as fast, and the traffic is not as nerve racking.

The Crime Scene Report Writing and Diagramming class was delayed due to Hurricane Helene. I was without power or the internet for over a week as I am sure some of you were as well. I pray for those who sustained damage from the storm and hopefully we won't see one like that for a long time. When I left Florida, I thought I left all that behind! The new date for the class was set for November 21, 2024, and we had a big turnout with about 27 students. Everyone had a wonderful time learning a few things and networking with others. I forgot to take a class photo though so I apologize for that.

In January, we have a class for latent examiners called "Pattern Interpretation" and this is being presented via Zoom by Brian Turner. Brian Turner is a forensic investigator with the Broward Sheriff Office (BSO) and is currently working on a doctorate in forensic science. He is also the Region 5 Director for the Florida Division of the International Association for Identification. Brian is an adjunct professor at Broward College in Davie, FL and has contributed to this field in so many ways. The class is scheduled to air on January 8th, 2025, from 2:00 pm to 4:00 pm. The Zoom link will be available on the announcement flyer, and I will make sure the course is recorded.

Now that the new year is approaching, let's start to get fired up for the spring conference! This year we are headed to Greer, SC for the training conference. Set aside the dates! May 5th – 8th, 2025 and note the location, Greer Events Center, 301 E. Poinsett St, Greer, SC. The cost is just $100 for members. That's 3 days of training for $100! Tell your supervisors how important it is to attend these training conferences. PS: They are so much fun too!

I look forward to seeing you all there. Until then, enjoy your life and be forever thankful for what you have. Blessed are the peacemakers and blessed are those that work behind the scenes to make sure our state is safe.

Thank you,

Teresa Bryant, SCIAI President

SCIAI ANNOUNCEMENTS

- ALL MEMBERS are encouraged to review the SCIAI constitution and by-laws posted on the website located under the News tab.
- Renewal for memberships must be submitted by Tuesday July 1st 2025 for the up-coming years' membership.
- Submissions for case study features and Member Spotlights are open. We want to highlight our members and interesting or unique cases that you have personally been involved with. If you would like to see yourself, a coworker, or one of your cases featured, please contact the Editor at bribrown@greenvillecounty.org
- Have a topic you would like to see covered or have an article you would like to submit for future issues of *The Identifier*? Submit your proposals to the Editor at bribrown@greenvillecounty.org — guest authors are welcome!
- If you've taken a newsletter appropriate forensic related photograph that you would like to see featured in an upcoming issue of The Identifier — Please contact the Editor at bribrown@greenvillecounty.org!

MEET THE OFFICERS

- President—Teresa Bryant
- Vice President—
- Treasurer—James Kearney
- Secretary—Chris Gary
- Historian—Brittany Brown

The Vice President spot is currently vacant!

Please contact Teresa at teresab450@gmail.com if interested in filling the position!

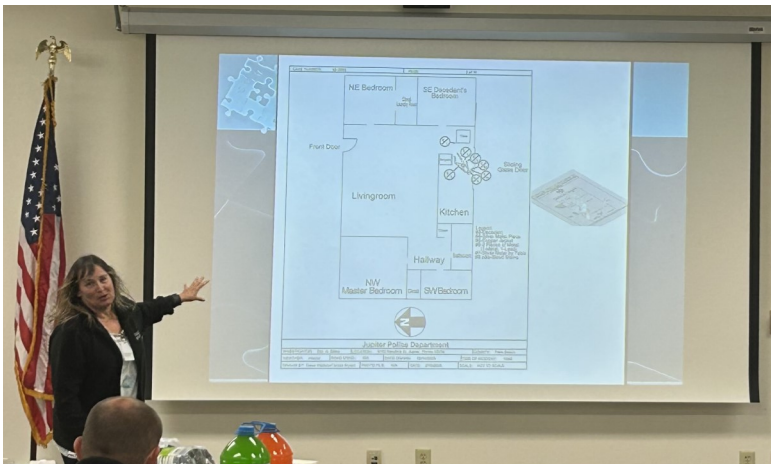
THE SOUTH CAROLINA DIVISION OF THE IAI

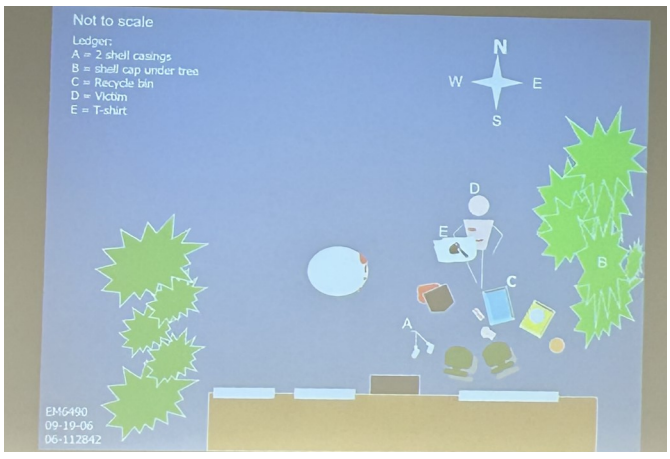
2024 FALL CRIME SCENE SEMINAR

Crime Scene Diagramming and Report Writing

- Teresa Bryant, Jupiter PD (Retired)-

Due to the aftermath of Hurricane Helene, this training seminar had to be rescheduled to 11/21/24. Approximately 27 attendees traveled from across the state to learn about diagramming and report writing! Teresa Bryant discussed the fundamentals of report writing, the challenges and impacts of poor documentation, and the structure of a good report. Teresa also explained the importance of diagramming and what equipment is required to create an accurate sketch. The different methods of sketching were also discussed. Thank you Teresa for a thorough presentation!





THE SOUTH CAROLINA DIVISION OF THE IAI

2025 LATENT PRINT WEBINAR

"Loops, Whorls, Arches, Oh My!"

- Brian Turner, Broward County Sheriff's Office (FL) -

January 8, 2025 2pm-4pm

Brian is a Crime Scene Investigator and Ten Print Specialist with BCSO in Florida. Additionally he is the current FDIAI Region 5 Director. Brian's webinar will explore the world of Pattern Interpretation which is still a vital skill for Tenprint and Latent Print examiners. Attendees will be introduced to the rules of fingerprint pattern interpretation and be able to apply those to classify fingerprints.

WORKSHOPS ***FREE*** FOR MEMBERS!- REGISTRATION OPEN NOW

$20 REGISTRATION FEE FOR NON-SCIAI MEMBERS PAYABLE AT WWW.SCIAI.ORG/TRAINING.HTML

GOOGLE FORM REGISTRATION LINK:
HTTPS://FORMS.GLE/EEKZIHTZDVDYZK268

A ZOOM LINK WILL BE EMAILED TO REGISTERED PARTICIPANTS THE WEEK OF THE WEBINAR!

NOT A MEMBER? JOIN TODAY AT SCIAI.ORG

Photo Spotlight!

Submitted by Forensic Technician H. Battles of Greenville County Forensics

If you would like to see yourself, a coworker, a photo or one of your cases featured in a future issue of *The Identifier*, please contact the Editor at bribrown@greenvillecounty.org

IN THE NEWS

Published: September 9, 2024

Found dead in the snow – how microbes can help pinpoint time of death for forensic investigations in frigid conditions

Introduction

What happens to a dead body in an extremely cold environment? Does it decompose? How do these conditions affect how forensic scientists understand when the person died?

Estimating time of death, also called the post-mortem interval, is a complex task. It plays an important role in forensic investigations, as it can provide critical insights into the timeline of events leading up to a person's death. This information can narrow down potential scenarios and suspects, aiding in the resolution of criminal cases.

A multitude of factors are at play at a death scene, ranging from environmental conditions to the individual's health status prior to death. Historically, scientists have estimated time of death by observing post-mortem physical and biological changes in the body, such as stiffening, fluid collection and cooling.

These methods are limited, however, by their variability and dependence on external factors. Calculating the post-mortem interval became more precise with the advent of molecular biology. But it's still a challenging task, especially in extreme cold weather conditions. There is often a lack of obvious signs of decomposition on a frozen body during the first months after death.

We are forensic scientists leading the forensics programs at the University of North Dakota and the University of Central Lancashire. We use molecular biology and bioinformatics to develop tools to help researchers and investigators more accurately estimate the post-mortem interval. Our recently published research in Frontiers in Microbiology found that studying the microbes involved in decomposition could predict time elapsed since death in extreme cold conditions with high accuracy.

Decomposition in Cold Environments

Our study took place in Grand Forks, North Dakota, one of the coldest cities in the United States, where winters are characterized by temperatures that can drop to -40 degrees Fahrenheit (-40 degrees Celsius) and high winds that can reach up to 31 miles per hour (50 kilometers per hour).

In an extremely cold environment like North Dakota's winters, traditional methods might not be enough to understand decomposition and estimate time of death. For instance, the body cools much faster in cold conditions, which can skew estimates based on body temperature.

(Continued on Page 10)

IN THE NEWS

Published: September 9, 2024

Found dead in the snow – how microbes can help pinpoint time of death for forensic investigations in frigid conditions

The researchers collect samples from the inside and outside of the noses of dead pigs. Lavinia Iancu, CC BY-ND

Similarly, cold environments can delay the onset and duration of rigor mortis, or body stiffening. The process of decomposition, including the activity of insects and other scavengers that contribute to the breakdown of the body, can also be slowed or halted by freezing temperatures.

Snow is another important factor when investigating decomposition. It can insulate a body by trapping residual heat and raising its temperature slightly higher than the surrounding environment. This insulating effect allows the body to decompose at a slower rate compared with bodies exposed to open air.

Microbes and time since death

In conditions of extreme cold, it becomes necessary to employ additional means to understand decomposition and estimate the time of death. Advanced molecular techniques, such as analyzing the microbiome, gene expression and protein degradation, can help provide valuable information about the crime scene.

Each organism has distinct microbial characteristics that act like a fingerprint. The necrobiome, a community of microbes associated with decomposing remains, plays a crucial role in decay. Specific microbes are present during different stages of decomposition, contributing to the breakdown of tissues and the recycling of nutrients. Forensic investigators can sample what microbes are living in a dead body to deduce how long ago a person died based on the makeup of the microbial population.

Our study focused on identifying common patterns in the microbial changes that occur during decomposition in extreme cold environments. Over a period of 23 weeks, we collected and analyzed 393 samples of microbes from the inside and outside of the noses dead pigs covered in snow. Pigs decompose similarly to humans and are commonly used in forensic research. We developed models to estimate the post-mortem interval by pairing microbial genetic data with environmental data such as snow depth and outdoor temperature.

(Continued on Page 11)

IN THE NEWS

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Found dead in the snow – how microbes can help pinpoint time of death for forensic investigations in frigid conditions

Overall, we found that the bacterial species *Psychrobacter*, *Pseudomonas* and *Carnobacterium* may best predict time after death in extreme winter conditions up to six months after death, with a margin of error of just over nine days.

We found that different bacterial species are most abundant at different time intervals. For example, levels of *Psychrobacter* increase five weeks after death and are most abundant at 10 weeks, while *Pseudomonas* increase between five to nine weeks and hit a peak at 18 weeks.

Improving Forensics

Death is often an unpleasant topic to bring into a conversation. But from a forensic perspective, having techniques and methods to determine when someone has died can help bring justice and peace for loved ones.

Our study found that decomposition does not completely halt even in cold environments. Studying the microenvironment – the local conditions surrounding the body, including temperature, humidity and microbial activity – can reveal crucial information about the decomposition process. The key microbial species we identified served as biomarkers of death, allowing us to develop time-of-death models that researchers can use to overcome the limitations of just visually examining remains.

Microbes can become a crucial piece of the puzzle during the process of investigating a death by aiding in constructing more precise timelines, even in extreme conditions.

Procopio, N., & Iancu, L. (2024, September 9). *Found dead in the snow – how microbes can help pinpoint time of death for forensic investigations in frigid conditions*. The Conversation. https://theconversation.com/found-dead-in-the-snow-how-microbes-can-help-pinpoint-time-of-death-for-forensic-investigations-in-frigid-conditions-234889

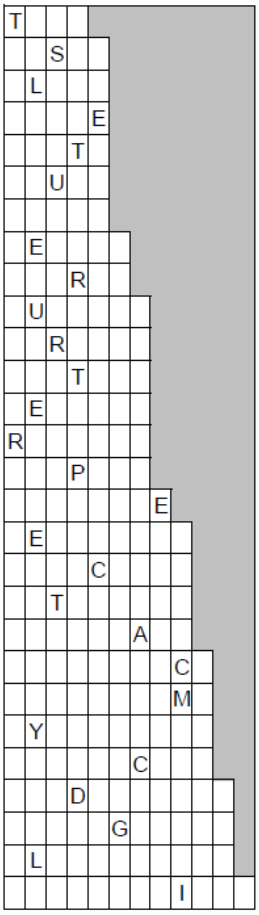
Fun with Forensics

Frequently in the field of Forensics, we, as a whole, deal with a variety of difficult and demanding scenes, tough scenarios, and are often placed in stressful situations. This panel is designed for you to have the opportunity take a quick mental break, refresh your mind, and also to have a little fun. ☺

FORENSICS!

CLUE SEARCH PUZZLES. COM COM COM

The getaway car will sometimes leave __ tracks that can be examined
A crime in itself, this is the use of fire to destroy evidence
A, AB, B and O are all types of __
CSI stands for __ Scene Investigation
Determining time of __ is a big part of a medical examiner's job
Forensic toxicologists search for toxins and __ in the body
A lie detector can be used to determine if a suspect is telling the __
An investigating officer should first tape off and __ the crime scene
The three main patterns of fingerprints are loops, arches, and __
A thorough medical examination of a dead body is called an __
A medical examiner usually works out of the __'s Office
Chain of __ is essential to best preserve evidence
Each person has unique __ codes known as DNA
Every contact at a crime scene both leaves and __ evidence
Don't break any laws and you won't become a __
Clues left behind by those committing a crime are called __
Bodies __ at different rates depending on location and temperature
A __ is usually the policeman investigating a crime
Police will want to __ people who may have knowledge of a crime
Evidence found away from the crime scene is called __ evidence
A scientific investigation technique linking a bullet to a gun
Only males have a Y- __ in their DNA
The person who saw something at a crime scene is a __
Small bits of evidence are often examined through a __
Ransom or suicide notes can be examined by a __ analysis
__ taken at the crime scene help investigators review evidence
Some hidden evidence can be seen with this type of light
No two identical __ have ever been found



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C	D	E	E	A	A	E	S	O	P	M	O	C	E	D
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Enter unused letters from puzzle, in order:

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Copy boxed letters to form your hidden message:

Solve Hundreds of Clue Search Puzzles
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Answers from the Forensic Science Week Trivia

1. *A*, 2. *B*, 3. *A*, 4. *D*, 5. *A*, 6. *D*, 7. *A*, 8. *C*, 9. *A*, 10. *B*

UPCOMING TRAINING/EVENTS

Feb 17th-21st, 2025, Bloodstain Pattern Analysis I

$745—Bevel, Gardner & Associates Inc, Greenville County Sheriff's Office, Taylors, SC

May 5th-8th, 2025, SCIAI Spring Conference

3 day, Greer Events Center, 301 E. Poinsett St, Greer, SC

$100 for members, $200 for non-members

Aug 11-15, 2025, Crime Scene Reconstruction I

$725—Bevel, Gardner & Associates Inc., SLED Forensics Laboratory, Columbia, SC

Sept 1-5, 2025, Bloodstain Pattern Analysis I

$745—Bevel, Gardner & Associates Inc, SLED Forensics Laboratory, Columbia, SC

If you have upcoming training that you would like advertised in the newsletter, contact the Editor with course information and details!

EMPLOYMENT OPPORTUNITIES

Greenville County: Firearms Laboratory

Greenville County: Administrative Specialist II

Greenville County: Criminalist—DNA Lab

North Charleston: Forensic Pathologist

Goose Creek: Forensic Unit Manager

Editor: Brittany Brown bribrown@greenvillecounty.org