



# Crime Scene



Fall 2011

Volume 37, Issue 4

**A TOAST TO THE NWAFS!**



**PREPARE TO CELEBRATE  
THE NWAFS'S  
40<sup>th</sup> ANNIVERSARY!**

September 2011

N W A F S N E W S L E T T E R

## Editor's Message

As I begin to write this message I, like everyone I know or meet, am extremely busy. In my case, 'busy' means trying to keep up at work, get this *Crime Scene* newsletter assembled along with preparing for the NWAFS meeting in Tacoma...Oh, and maintain a relationship with my family!

I am sincere in my raising "*a toast to the NWAFS*"! I am very proud to not only be a member of this organization but to be actively involved, especially as we close in on a significant accomplishment...40 years as an organization! In my preparation of this newsletter, I thought that it would be good to read some of the early NWAFS newsletters. The readings were fascinating, and many of the issues that are encountered today were also encountered early on, such as certification and budgets. With this, I will be revisiting these topics, articles and more in the next 3 issues.

This edition welcomes back Jeff Teitelbaum with an article in **Asked & Answered** along with another article from Matt Noedel. A training review from Steven Stone is there for your enjoyment and a little bit of NWAFS history is available so that we can all understand where our organization has been.

Please send me an email to tell me what you would like to see in the upcoming issues. The Publication committee and I have a very busy year ahead of us and we need everyone's help. Have a great rest of the year and make sure that you take some time to raise "*a toast to the NWAFS*"!

*Thank you,  
Jeff Jagmin*

### *About the Newsletter...*

*Crime Scene* is the official publication of the Northwest Association of Forensic Scientists. It is published 4 times a year in the months of January, April, July, and October. The Newsletter welcomes submissions from its membership such as technical tips, case studies, literature compilations, workshop or training notifications, reference citations, commentary, historical accounts, and other topics of interest to the membership. The views expressed in articles contained in this publication do not necessarily represent the views of the Northwest Association of Forensic Scientists. The Association neither guarantees, warrants, nor endorses these views or techniques but offers these articles as information to the membership.

Please submit material for publication in Microsoft Word for Windows format as an e-mail attachment or on compact disk (CD). All technical material will be subject to peer review by NWAFS members. Requests for permission of any material contained in this newsletter may be addressed to the editor. Requests, or questions, of technical submissions will be directed to the originating author. For more information regarding the Newsletter contact:

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# NWAFS Crime Scene TABLE OF CONTENTS

<i>President's Message</i> <i>Matthew Noedel, NWAFS President</i>	5
<b><i>Asked &amp; Answered - Search tips from a forensic library</i></b> <i>Jeff Teitelbaum, Washington State Patrol</i>	6
<i>In the beginning...A brief history of the NWAFS</i> <i>Dan Alessio, NWAFS Vice President</i>	10
<i>"The Meaning of the Logo"</i>	11
<i>Do You Have What it Takes?</i>	12
<i>Fired Bullet Impact Site Evaluation: Tumbling Bullet versus Angled Shot</i> <i>Matthew Noedel, Noedel Scientific</i>	14
<i>A Look at the Federal Rules of Evidence</i> <i>Jeff Jagmin, Washington State Patrol</i>	24
<b><i>SWGDRUG UPDATE</i></b>	28
<i>The Trace Evidence Symposium 2011 - A Review</i> <i>Steven Stone, Washington State Patrol</i>	29
<i>Synthetic Cathinone Information</i>	32
<i>Meeting Announcements</i>	34
<i>NWAFS Fall Amusements</i>	35
<i>Forensic Science Puzzler -- Halloween Edition --</i> <i>Jennifer Malone, Wyoming State Crime Laboratory</i>	36
<i>Caption This</i>	38

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# *PRESIDENT'S MESSAGE*

**September 2011**

This issue of Crime Scene is being released concurrent with our 2011 conference in Tacoma. The 2011 conference was almost the first year in which we had NO volunteers to host a meeting greatly jeopardizing the event for this year. Since that time, we have been able to plan, implement and register eleven vendors and over eighty individual participants. A big thanks must be offered to the Washington State Patrol Crime Laboratory for their overwhelming financial support of the Tacoma meeting. Without their support of the NWAFFS, this meeting would have most likely been a large scale loss!

In an effort to avoid ever facing such a scheduling disaster again, our Member at Large (Chris Hamburg Oregon State Police Forensic Services) has spent the year recruiting and grooming future locations for our conference. Your Board of Directors has taken on the responsibility of planning, implementing, organizing and coordinating the meeting next year to be held in Missoula MT. Using the forms and formulas that were successful this year, the Board will be modifying the forms and plugging them back in for the Missoula meeting. The Montana State Crime Laboratory has also offered to help with much of the “on the ground” responsibilities and for their commitment, they will have a large say in what training is brought to the conference.

The Missoula meeting will represent our 40<sup>th</sup> Anniversary as an organization. Over those 40 years literally hundreds of forensic scientists attended workshops covering EVERY conceivable topic in the field. The NWAFFS hopes to continue providing these training opportunities but we need the membership to be involved—both as instructors and attendees. It is in this spirit that I request that you start thinking now about attending Missoula and identifying to the Board what type of training YOU would like to attend.

Consider the following for yourself:

If the NWAFFS offered \_\_\_\_\_, I would absolutely attend the conference. What topics or events would you fill in that blank? Think selfishly—what training or event would help YOU and YOUR career? What would the NWAFFS have to offer to make you think “Wow—I need to be involved with that...” If you can fill in the blank then let the Board know. All of the Board emails are available at:

[www.nwafs.org](http://www.nwafs.org)

I look forward to seeing you all next year at the conference in Missoula, MT. Pay attention to the Crime Scene for dates and details and be sure to let your needs known so that the Board can implement a training program that you won't miss.

Matthew Noedel, President NWAFFS  
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## Asked & Answered

*Search tips from a forensic library*

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### Writing an abstract

As one of its definitions for the term “abstract,” the Oxford English Dictionary offers: ‘A smaller quantity containing the virtue or power of a greater.’

The importance of a well-written journal article or presentation abstract cannot be overstated:

1. In the majority of cases, the abstract is read far more often than any other part of an article.
2. In this age of electronic indexing, the abstract and title are the two elements that will appear most consistently in databases, search engine results, and abstracting services.
3. The abstract is often your calling card when applying to publish or present at a conference meeting.

It is interesting to note that there were numerous articles published in the 1970’s on the art of writing an abstract...not so many in the 1980’s and 1990’s...and then another flurry of them in the early 2000’s. The sudden re-interest in abstract-writing advice probably related to the importance of electronic indexing, but a lot of the newer articles were written by journal editors and conference chairs explaining why so many authors had been rejected. *Abstracts are extremely important*, and many of them are poorly written.

**What is an abstract?** An abstract is a condensed version of a full scientific paper; a concise synthesis of the data. It describes a study and its results. It is a means of conveying to one’s peers what was done and why, what was found, and what the implications are (Pierson 2004). Many papers and books, including the very authoritative **Scientific Style and Format** manual, refer to two standards documents as providing the best ‘instructions’ on which to model an abstract: the **ISO 214-1976** and the **ANSI/NISO Z39.14-1997**. Above all, these documents emphasize that “a well-prepared abstract enables readers (a) to identify the basic content of a document quickly, (b) to determine its relevance to their interests, and thus (c) to decide whether they need to read the document in its entirety (ANSI/NISO 1997).

The following article abstract not only exemplifies a well-written abstract but also *explains* the elements that make a good abstract:

*Preparation, submission, and presentation of an abstract are important facets of the research process, which benefit the investigator/author in several ways. Writing an abstract consists primarily of answering the questions, “Why did you start?” “What did you do?” “What did you find?” and “What does it mean?” A few practical steps in preparing to write the abstract can facilitate the process. This article discusses those steps and offers suggestions for writing each of an abstract’s components (title, author list, introduction, methods, results, and conclusions); considers the advantages and disadvantages of incorporating a table or figure into the abstract; offers several general writing tips; and provides annotated examples of well-prepared abstracts: one from an original study, one from a method/device evaluation, and one from a case report (Pierson 2004).*

One other option is the ‘**structured abstract**’ that is starting to become more common. It simply breaks up the abstract into 4 brief sections with the following labels:

**Background**  
**Methods**  
**Results**  
**Conclusions**

Here is an example of a structured abstract (Von Elm 2003):

**More insight into the fate of biomedical meeting abstracts: a systematic review**

**Background:** It has been estimated that about 45% of abstracts that are accepted for presentation at biomedical meetings will subsequently be published in full. The acceptance of abstracts at meetings and their fate after initial rejection are less well understood. We set out to estimate the proportion of abstracts submitted to meetings that are eventually published as full reports, and to explore factors that are associated with meeting acceptance and successful publication.

**Methods:** Studies analysing acceptance of abstracts at biomedical meetings or their subsequent full publication were searched in MEDLINE, OLDMEDLINE, EMBASE, Cochrane Library, CINAHL, BIOSIS, Science Citation Index Expanded, and by hand searching of bibliographies and proceedings. We estimated rates of abstract acceptance and of subsequent full publication, and identified abstract and meeting characteristics associated with acceptance and publication, using logistic regression analysis, survival-type analysis, and meta-analysis.



**Results:** Analysed meetings were held between 1957 and 1999. Of 14945 abstracts that were submitted to 43 meetings, 46% were accepted. The rate of full publication was studied with 19123 abstracts that were presented at 234 meetings. Using survival-type analysis, we estimated that 27% were published after two, 41% after four, and 44% after six years. Of 2412 abstracts that were rejected at 24 meetings, 27% were published despite rejection. Factors associated with both abstract acceptance and subsequent publication were basic science and positive study outcome. Large meetings and those held outside the US were more likely to accept abstracts. Abstracts were more likely to be published subsequently if presented either orally, at small meetings, or at a US meeting. Abstract acceptance itself was strongly associated with full publication.

**Conclusions:** About one third of abstracts submitted to biomedical meetings were published as full reports. Acceptance at meetings and publication were associated with specific characteristics of abstracts and meetings.

Here are some of the best bits of advice culled from a number of articles, standards, and books:

1. Write the abstract last. It is impossible to abstract something that has not been written (Thrower 2007)!
2. Abide by this basic framework:
  - a. The purpose of the study
  - b. The methods
  - c. The major results
  - d. The interpretation and implications
3. The abstract should be one paragraph (with the exception of the 'structured abstract' discussed earlier).
4. The abstract must be able to stand alone. The reader must be able to understand it without reference to the whole paper (Thrower 2007).
5. It should rarely exceed 250 words.
6. Write clearly and economically. Avoid using abbreviations if possible. If abbreviations are important, spell them out the first time they are used. Example: if using **GCMS**, write **Gas Chromatography-Mass Spectrometry (GCMS)** the first time it is used.
7. The abstract must not contain material that is not covered in the paper.
8. Read the submitting instructions for the journal or conference. Don't give them any formatting reasons to reject your work.



An abstract that is poorly written or confusing can certainly be an indication of a paper that is poorly written or confusing, but in many cases, the abstract is simply not given the care and attention that it should. Editors have stated that many abstracts seem hastily written in order to complete the electronic submission (Pierson 2004), so spending some real time writing your abstract will be time well spent.

### **References and suggested reading:**

ANSI/NISO Z39.14-1997: Guidelines for abstracts. American National Standards Institute.

Council of Science Editors, Style Manual Committee. Scientific style and format: the CSE manual for authors, editors, and publishers. 7th ed. Reston (VA): The Council: 2006.

Day, R.A., Gastel, B. 2006. How to write and publish a scientific paper. 6<sup>th</sup> ed. Westport, CT: Greenwood Press. 302 p.

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*Jeff Teitelbaum*

*September 7, 2011*

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## In the beginning...

# A brief history of the NWAFS

Dan Alessio, our NWAFS Vice President and Junior Historian, previously assembled this information of how the NWAFS organization came about.

**October 7, 1971:** The Idaho Department of Health, under the direction of Dr. Darrell Brock and Bob Lawson, sponsored a meeting of Pacific Northwest Drug Analysts in Boise, Idaho. The one day meeting was a sharing of methods, evidence handling procedures and lab organization. The main thrust of the meeting was to establish a permanent organization. The seeds of the Northwest Association had been planted. Nine people attended that first meeting:

**Dr. Darrell Brock – Idaho**  
**Bob Lawson – Idaho**  
**Rick Groff – Idaho**  
**Arnold Melnikoff – Montana**  
**Bob Sager – Bureau of Narcotics and Dangerous Drugs (BNDD)**  
**John Anderson – Washington**  
**Bob Dews – Washington**  
**Don Phillips – Washington**  
**Ron Kuest – Washington**

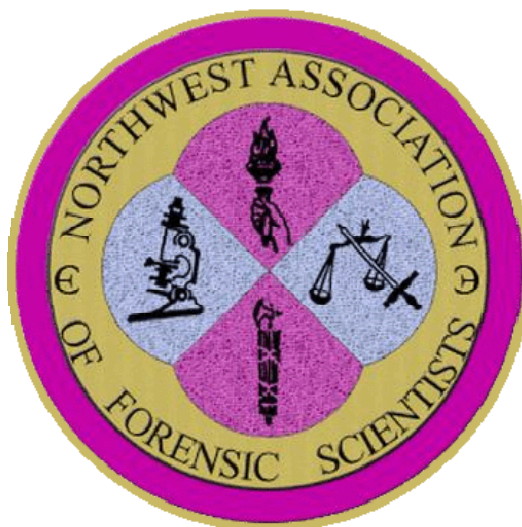
**April 6-8, 1972:** The first meeting of the Northwest Association of Forensic Scientists was held in Spokane, Washington. Seventeen people were in attendance representing Alaska, California, Idaho, Montana, Oregon and Washington. A charter and bylaws were discussed, and a committee was appointed to write the charter and report back at the next meeting scheduled for that fall.

**October 7, 1972:** Forty people met in Seattle, Washington and adopted the constitution of the Northwest Association of Forensic Scientists. There were 31 charter members:

<p><b>Ann Ames</b>  <b>Don MacLaren</b>  <b>John Anderson</b>  <b>Arnold Melnikoff</b>  <b>Tom Antos</b>  <b>Lou Nauman</b>  <b>Jan Beck</b>  <b>Mike Noval</b>  <b>Ann Bradley</b>  <b>Kent Oakes</b>  <b>Daryl Brender</b></p>	<p><b>Robert Peschka</b>  <b>Robert Dews</b>  <b>Robert Phillips</b>  <b>Bill Dunagan</b>  <b>Don Phillips</b>  <b>Edward Formoso</b>  <b>Bob Pinnick</b>  <b>Bob Fenty</b>  <b>David Predmore</b>  <b>William Gresham</b>  <b>Robert Sager</b></p>	<p><b>Richard Groff</b>  <b>Donald Smith</b>  <b>George Ishii</b>  <b>Kay Sweeney</b>  <b>Gerald Johnson</b>  <b>Gaylan Warren</b>  <b>Ron Kuest</b>  <b>Floyd Whiting</b>  <b>John Long</b></p>
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## “THE MEANING OF THE LOGO”

From the NWAFS newsletter archives! This is a reprint of an article by “The Editor” (Daryl Brender with the Eastern Washington State Crime Laboratory) February, 1977, Volume III, Issue I.



The color scheme is in three parts: Gold meaning Science, Blue meaning Truth, and Purple meaning Justice.

The four pictures of equal balance are the Scales of Justice, The Torch of Knowledge, The Microscope denoting Criminalistics or Forensic Science and The Fasces the Symbol of Authority.

The Association's name is part of the Logo and the pharmaceutical symbol  $\mathfrak{D}$  denotes the association as having scruples.



### Current Editor's Notes:

From documents provided by Dan Alessio the Logo was designed in the winter of '72-'73, by John Anderson, Gaylan Warren and Bob Sager.

The scruple, represented by the symbol  $\mathfrak{D}$ , is from the Apothecaries system of weights which was common to Pharmacists and Physicians who were in practice before the 1960's.

**1 scruple is equal to 20 grains**

## ***DO YOU HAVE WHAT IT TAKES?***

The Northwest Association of Forensic Scientists is seeking a venue for its upcoming **2013** Annual Meeting. Future meetings are set to be held in Missoula, MT (2012) and Reno, NV (2014).

Hosting the NWAFFS Annual Meeting provides numerous benefits at little cost to the host agency. As the host agency, you and your agency would:

- Have significant input into the workshops that are provided
- Take the opportunity to provide training/CE credits to your agency's scientist with little or no travel/per diem costs associated with a forensic conference
- Provide a great platform for scientists to present novel research partnered with the NWAFFS, scientific papers or interesting cases.

The NWAFFS is known for its high level of camaraderie and inter-agency partnership that fosters the sharing of information.

While the host agency takes on many responsibilities, the NWAFFS minimizes the time commitment and provides support in the following ways:

- The NWAFFS uses an agent to solicit hotels, negotiate price, provide meal counts, and secure meeting space details
- The NWAFFS Technical Secretary is tasked with recruiting, suggesting, and organizing workshop topics; however, the host agency has significant input to garner pertinent training
- The previous conference host and the NWAFFS Editor assist by supplying forms for registration and workshops as well as marketing for the conference
- The NWAFFS Board supports the meeting planning throughout the whole process (many Board members have previously hosted meetings and are very willing to help).

Hosting the NWAFFS Annual Meeting also provides a boost to the local economy of the host city by guaranteeing over 100 lodging room nights as well as food/beverage orders at local dining locations.

***Up for the challenge???*** Contact Chris Hamburg, NWAFFS Member-at-Large, [chris.hamburg@state.or.us](mailto:chris.hamburg@state.or.us). Go to [www.nwaffs.org](http://www.nwaffs.org) for information regarding previous annual meetings as well as contact information for all NWAFFS Board members.

# Calling all Hoarders!

A Courtesy Message from Steven Stone



The NWAFS editor is seeking assistance in finding any materials that represent our NWAFS history. Throughout the years there have been a variety of newsletters, fliers, collectables, and other items from the beginning of our organization and forward. Unfortunately,

computers took up whole rooms at that time so these materials were largely created by hand or an old fashioned thing called a typewriter.



This is why we need **YOU** to scrounge around and see who still has what. You can check the desks of the newly retired, your supervisor, lab manager, quality manager, or even top management (they are more likely to have the older stuff!).



Dig through old file cabinets in the back of storage rooms! Dig through that dusty room that no one goes in because it smells like old paper!

Your findings will contribute to a historical record of the NWAFS (something particularly useful for our newer NWAFS members).



**Once you find it, let Jeff know what you got...  
please just don't send him random stuff!**

[Jeff.Jagmin@wsp.wa.gov](mailto:Jeff.Jagmin@wsp.wa.gov)

## Fired Bullet Impact Site Evaluation: Tumbling Bullet versus Angled Shot

By: Matthew Noedel, Noedel Scientific Puyallup, WA

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**Keywords:** Angle of Incident, Bullet Impact Site, Ellipse, Tumbling Bullet

*Abstract: Evaluating a bullet impact site can offer useful reconstruction information. This case report outlines the visual differences that may be revealed when attempting to differentiate between a bullet that is tumbling from one that has entered at an angle. The value of considering bullet impact sites are exemplified in the case scenario presented.*

### Background

This case involves the examination of a shooting scene where two different shooters were involved. The location of this event was in a relatively narrow external apartment corridor (see Figure 1). One shooter ("A") delivered four shots from inside an apartment through the closed (or mostly closed) front door. Some of those fired bullets struck locations across the corridor impacting the wall opposite from his apartment. A second shooter ("B") delivered one shot from outside of the apartment and recalled shooting toward the door from where the other shots had originated. Shooter "B" claimed that he was shooting at the individual who had shot through the closed door. This review outlines the visual evaluation of these impacts to reveal how the appearances of the impact sites were helpful for reconstruction. Part of the reconstruction involved attempting to determine where shooter "B" was located when he fired, and what his point of aim was at that instant.

### Observations

Figure 2 shows the trajectory rod placement of the four bullet paths through the door from the apartment where shooter "A" was located. Figure 3 shows four bullet impact sites across the hall. However, one of the fired bullets that came through the door was known to have impacted (without exiting) an individual in the corridor. So the four impacts across the hall could NOT have all come from shooter "A" because one of his bullets struck and remained in an individual in the corridor.

Extending the trajectory rods (by using a laser attached to the end of each rod) to the locations across the corridor aligned very well with two of the impacts. A third trajectory was associated with the bullet known to have struck the individual and the fourth trajectory aligned generally straight across the corridor from the door, where two bullet impact sites very close to each other were observed. The evaluation of the two adjacent bullet defects is the focus of the rest of this examination.

## Examination

Figure 4 shows the appearance and relative position of the two adjacent impact sites under consideration. Upon close inspection, the physical appearances of these two defects look different from each other. The impact depicted in the upper left area of the image exhibits a long, elliptical appearance. The bullet that caused this damage entered from the right at a relatively low angle and continued into the wall. The angle was shallow enough to leave the long elliptical defect, but not so shallow as to ricochet completely off of the wall. This defect exhibits a well formed “lead-in” mark as the bullet started “shallow” and then got deeper as it penetrated into the wall.

The impact depicted in the lower right area of Figure 4 has a significantly different appearance. Rather than exhibiting a long, elliptical appearance with a well formed “lead-in”, this defect shows a very symmetric ovoid appearance. This defect lacks the same visual cues as observed in the upper left defect and requires further consideration in context with the scene.

To understand how to interpret these bullet impact sites one must first consider how each of these bullets would be expected to perform. Each firearm involved (both handguns) was known to have rifling in their respective barrels. Rifling serves to spin stabilize a fired bullet such that upon exit from the barrel, the bullets fly true, nose forward and without significant “yaw” or tumbling. Undisturbed, a spin stabilized bullet can leave an elliptical shaped bullet hole indicative of the angle from which it originated as it pushes through the barrier nose forward. Figure 5 shows a series of impact sites from spin stabilized test shots delivered at known angles without an intermediate object present.

However, when a fired bullet strikes an intermediate object, the spin stability is destroyed by the interaction and the bullet will begin to tumble while still maintaining its forward momentum. If a destabilized fired bullet has sufficient remaining energy, it can strike secondary objects not nose forward-but side, base or any angle in between as the bullet tumbles, rotates and “helicopters” from the intermediate impact. Figure 6 shows a “sideways” impact from a test shot purposefully destabilized prior to impact.

## Results

In this event, shots were known to have been delivered through a closed door. The door had a metal exterior with a Styrofoam filled interior. This door represented a significant intermediate object for the fired bullets to overcome and would certainly destabilize and cause tumbling of any bullet that could perforate the door. Knowing this, one should look for evidence of the impact of a tumbling bullet across the corridor rather than a spin stabilized impact.

Referring back to Figure 4, the upper left of the two impacts has a symmetric rather than “elliptical” appearance. The impact at the lower right portion does not show a “lead in” mark as expected with a stabilized bullet and generally has the appearance of a bullet that may have struck sideways. Further, the upper left defect exhibits a profile that indicates it was traveling generally



from right toward left as it penetrated. Since these defects are straight across the hall from the door, the upper left bullet (if from across the hall) would have had to make a dramatic turn (from right to left) in the middle of the hall for no reason. Therefore, the best explanation (given these observations) is that the fourth shot through the door aligns with the lower right impact in Figure 4.

Finally, considering that the upper left defect in Figure 4 exhibits signs of having been fired directly into the wall, one can generally back track from the long axis of that defect and estimate the shooter's general location. Shooter "B" had to be located in the corridor and shooting generally down the hall (southward) in a direction nearly perpendicular to the direction of shots coming through the door (see Figure 7). This bullet path does not support the recollection of shooter "B" that he was firing at the door where the other four shots had originated.

## Conclusions

Bullet impact sites can often provide immediate information about the performance, origin and reconstructive elements of a shooting scene. By paying attention to the appearance of bullet impact sites, one can consider if there may be an up-range ricochet or intermediate object which may help lead an examiner to additional physical evidence. In the event outlined here, crime laboratory results about the recovered fired bullets supported (long after the scene was cleared) the reconstruction observations and identified that the bullet from the lower right defect had originated from shooter "A" and the upper left bullet had originated from the gun from shooter "B". The recollection of shooter "B" as shooting toward the apartment door was not supported by the physical evidence.

## References

Barr, Darryl "Modification to the Common Trigonometric Method of Bullet Impact Angle Determination" AFTE Journal Volume 33, Number 2 Spring 2001, Page 116

Gardner, Ross M; Bevel, Tom "Practical Crime Scene Analysis and Reconstruction" Chapter 7 Page 153-155; CRC Press 2009

Haag, Lucien C, "Shooting Incident Reconstruction" Chapter 6 Page 83; Elsevier 2006



Figure 1-Four shots (red arrows) were delivered from the interior of the apartment on the right. One fired bullet struck an individual and was stopped; the other three impacted the wall across the corridor.



Figure 2-Original scene image of the exit side of the door through which shooter "A" delivered 4 shots-only three of these can hit the opposite wall.



Figure 3-Four bullet impact sites located across the wall from the apartment. (Note-these images have been aligned for purposes of demonstration and do not represent the actual position of each on the wall)

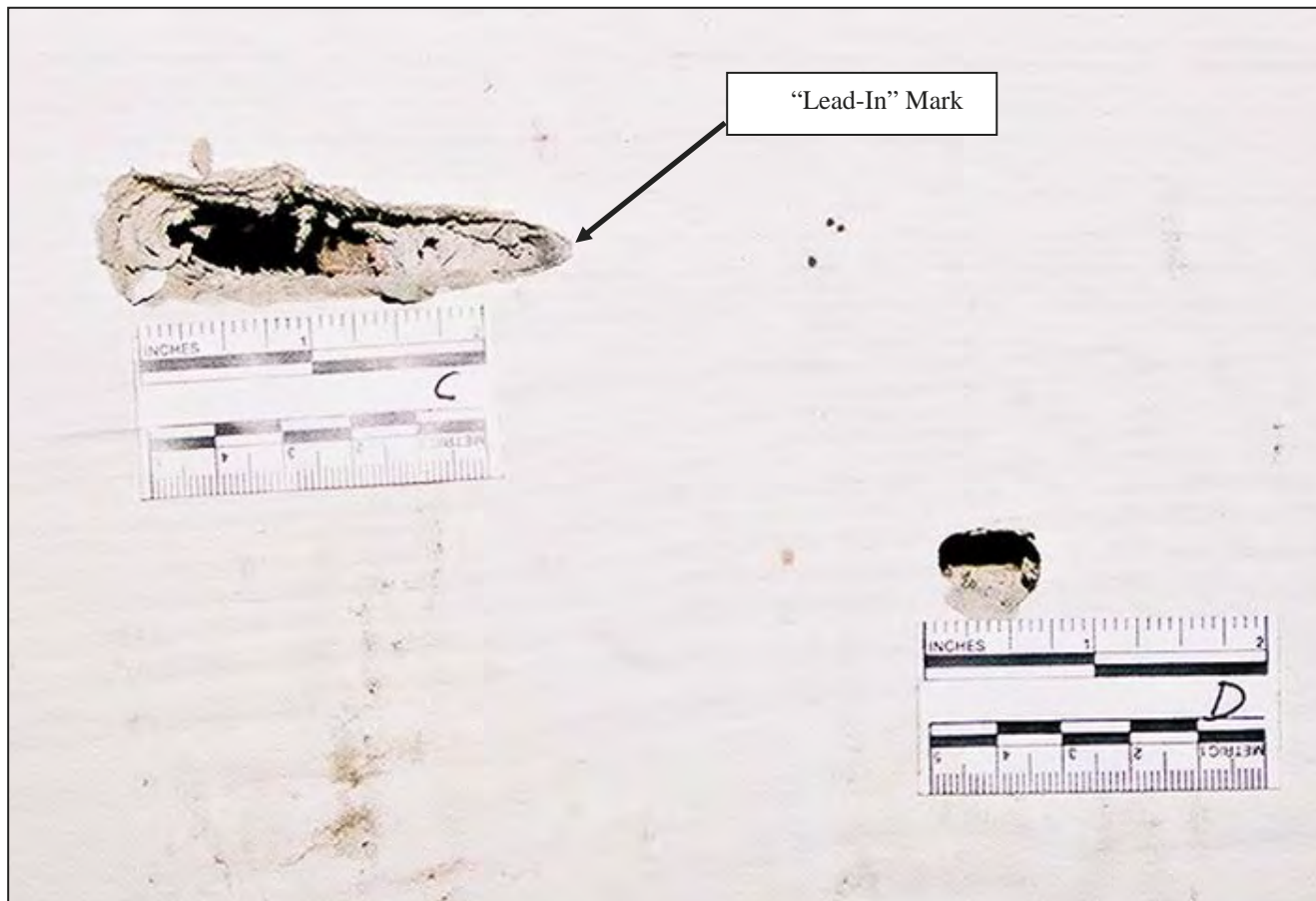


Figure 4-The two bullet impact sites in question-did both come from straight across the hall?



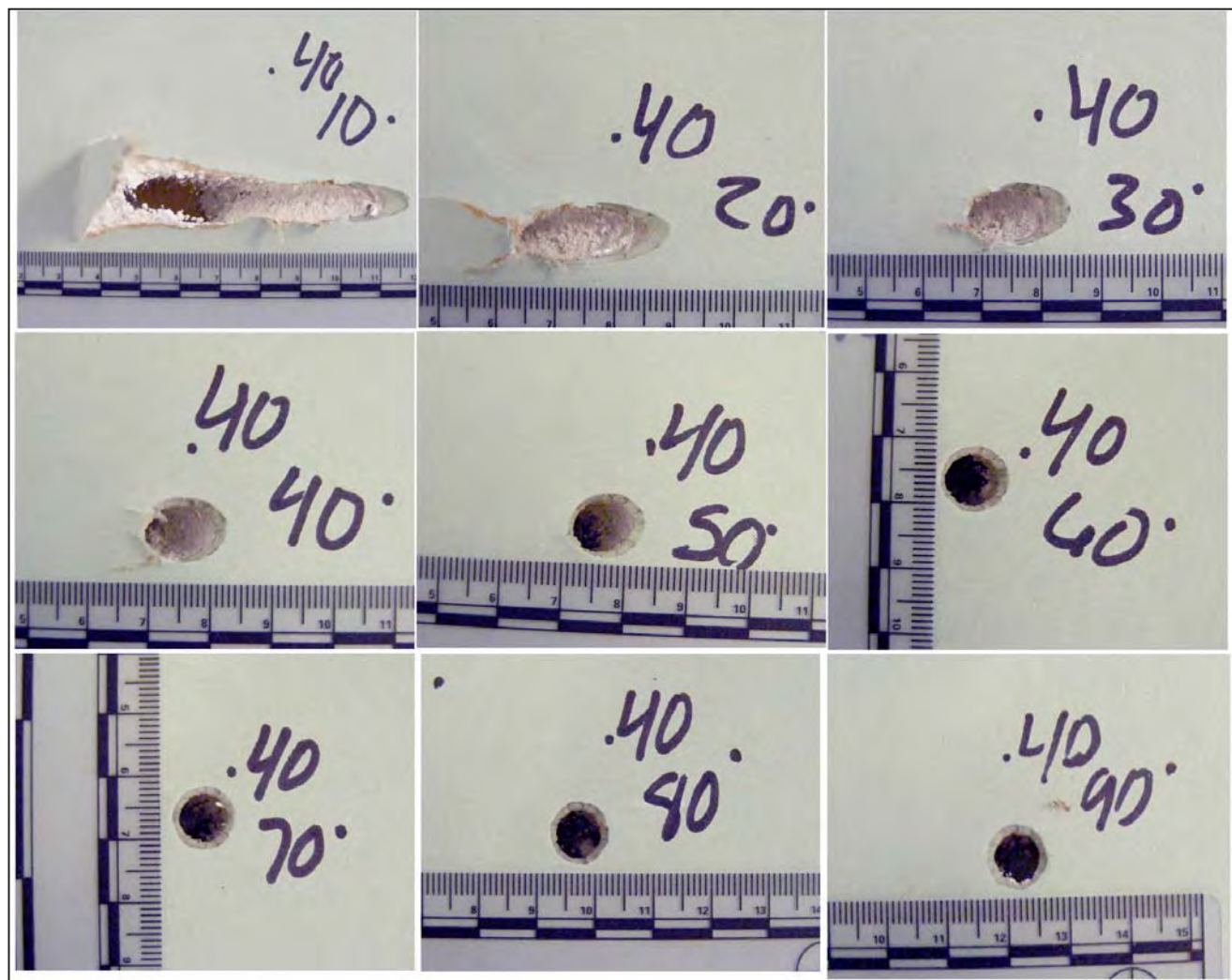


Figure 5- A series of bullet impacts (fired into drywall) at different angles (10 degrees up to 90 degrees) from “non-tumbling” (stable) fired .40 caliber bullets. Bullet direction was from right toward left in each shot.



Figure 6- An impact site from a fired bullet that struck an intermediate object (the sand) first (the bullet originated from essentially 90 degrees-straight ahead). The intermediate object caused the bullet to tumble and enter the panel sideways and with the nose upward.

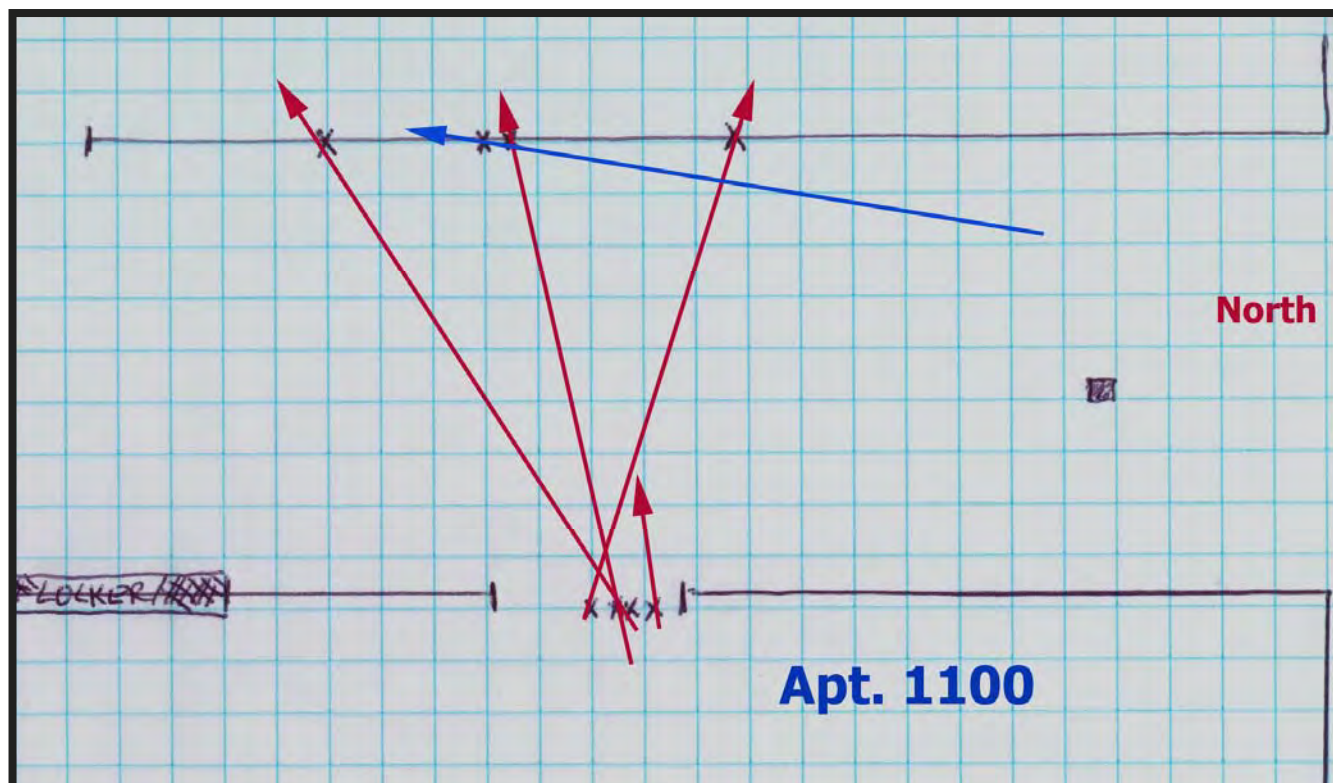


Figure 7-The correct interpretation for the bullet paths delivered that struck the wall opposite apartment 1100. Three bullets went through the door, forcing them to tumble when they struck, one bullet went through the door and struck an individual (non-exiting) and a fifth shot (blue arrow-from shooter "B") was delivered at a low angle generally southward into the opposing wall.



## Do you need some help keeping up with forensic science literature?

### Here is a great resource for you!

You are invited to take advantage of an outstanding no-cost opportunity to improve awareness of developments and discoveries in the forensic sciences. Jeff Teitelbaum is one of very few professional librarians in the world specializing in forensic science information resources. Jeff is the librarian at the Washington State Patrol Crime Laboratory in Seattle, and has amassed a unique collection of forensic science resources. One of the services he offers, at no charge to the forensic science community, is distribution of the Tables of Content (TOC's) for a variety of forensic science journals, as well as alerts about new government reports, databases and websites, and other resources that pertain to the forensic sciences.

Journals monitored include:

- Journal of Forensic Sciences
- Journal of Analytical Toxicology
- Forensic Science International
- Forensic Toxicology
- Science & Justice
- USDOJ Reports
- FBI Microgram Bulletin
- Journal of Forensic and Legal Medicine
- Journal of Forensic Identification
- Traffic Injury Prevention
- ...and many others.



To receive these alerts please contact Jeff directly at [jeff.teitelbaum@wsp.wa.gov](mailto:jeff.teitelbaum@wsp.wa.gov).

**Jeff Teitelbaum, MLIS | Forensic Science Library Services**  
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# A Look at the Federal Rules of Evidence

In preparing for an upcoming Adobe® Photoshop® class that I will be instructing at the NWAFS Tacoma meeting I thought that it would be important to give those attending my class information on how photographic evidence is handled in the courtroom. Where else best to start then to look at the Federal Rules of Evidence!

Although I recently assigned one of my staff to read these Federal Rules for his training, the last time that I really looked at these Federal Rules was approximately 14½ years ago when I just began my forensic scientist career. Here are the specific articles:

ARTICLE I	GENERAL PROVISIONS
ARTICLE II	JUDICIAL NOTICE
ARTICLE III	PRESUMPTIONS IN CIVIL ACTIONS AND PROCEEDINGS
ARTICLE IV	RELEVANCY AND ITS LIMITS
ARTICLE V	PRIVILEGES
ARTICLE VI	WITNESSES
ARTICLE VII	OPINIONS AND EXPERT TESTIMONY
ARTICLE VIII	HEARSAY
ARTICLE IX	AUTHENTICATION AND IDENTIFICATION
ARTICLE X	CONTENTS OF WRITINGS, RECORDINGS, AND PHOTOGRAPHS
ARTICLE XI	MISCELLANEOUS RULES

Wow, articles on “Opinions and Expert Testimony” and one on “Contents of Writings, Recordings, and Photographs”. Maybe it’s time we all take a closer look at what these 2 articles have to say.

## VII OPINIONS AND EXPERT TESTIMONY

### Rule 701 Opinion Testimony by Lay Witnesses

If the witness is not testifying as an expert, the witness' testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness, and (b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue, and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

### Rule 702 Testimony by Experts

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

**Rule 703 Bases of Opinion Testimony by Experts**

The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted. Facts or data that are otherwise inadmissible shall not be disclosed to the jury by the proponent of the opinion or inference unless the court determines that their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect.

**Rule 704 Opinion on Ultimate Issue**

(a) Except as provided in subdivision (b), testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.

(b) No expert witness testifying with respect to the mental state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto. Such ultimate issues are matters for the trier of fact alone.

**Rule 705 Disclosure of Facts or Data Underlying Expert Opinion**

The expert may testify in terms of opinion or inference and give reasons therefore without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination.

**Rule 706 Court Appointed Experts**

(a) **Appointment.**--The court may on its own motion or on the motion of any party enter an order to show cause why expert witnesses should not be appointed, and may request the parties to submit nominations. The court may appoint any expert witnesses agreed upon by the parties, and may appoint expert witnesses of its own selection. An expert witness shall not be appointed by the court unless the witness consents to act. A witness so appointed shall be informed of the witness' duties by the court in writing, a copy of which shall be filed with the clerk, or at a conference in which the parties shall have opportunity to participate. A witness so appointed shall advise the parties of the witness' findings, if any; the witness' deposition may be taken by any party; and the witness may be called to testify by the court or any party. The witness shall be subject to cross-examination by each party, including a party calling the witness.

(b) **Compensation.**--Expert witnesses so appointed are entitled to reasonable compensation in whatever sum the court may allow. The compensation thus fixed is payable from funds which may be provided by law in criminal cases and civil actions and proceedings involving just compensation under the fifth amendment. In other civil actions and proceedings the compensation shall be paid by the parties in such proportion and at such time as the court directs, and thereafter charged in like manner as other costs.

(c) **Disclosure of appointment.**--In the exercise of its discretion, the court may authorize disclosure to the jury of the fact that the court appointed the expert witness.

(d) **Parties' experts of own selection.**--Nothing in this rule limits the parties in calling expert witnesses of their own selection.

## **ARTICLE X CONTENTS OF WRITINGS, RECORDINGS, AND PHOTOGRAPHS**

### **Rule 1001 Definitions [Writings]**

For purposes of this article the following definitions are applicable:

(1) **Writings and recordings.**--"Writings" and "recordings" consist of letters, words, or numbers, or their equivalent, set down by handwriting, typewriting, printing, photostating, photographing, magnetic impulse, mechanical or electronic recording, or other form of data compilation.

(2) **Photographs.**--"Photographs" include still photographs, X-ray films, video tapes, and motion pictures.

(3) **Original.**--An "original" of a writing or recording is the writing or recording itself or any counterpart intended to have the same effect by a person executing or issuing it. An "original" of a photograph includes the negative or any print there from. If data are stored in a computer or similar device, any printout or other output readable by sight, shown to reflect the data accurately, is an "original".

(4) **Duplicate.**--A "duplicate" is a counterpart produced by the same impression as the original, or from the same matrix, or by means of photography, including enlargements and miniatures, or by mechanical or electronic re-recording, or by chemical reproduction, or by other equivalent techniques which accurately reproduces the original.

### **Rule 1002 Requirement of Original**

To prove the content of a writing, recording, or photograph, the original writing, recording, or photograph is required, except as otherwise provided in these rules or by Act of Congress.

### **Rule 1003 Admissibility of Duplicates**

A duplicate is admissible to the same extent as an original unless (1) a genuine question is raised as to the authenticity of the original or (2) in the circumstances it would be unfair to admit the duplicate in lieu of the original.

### **Rule 1004 Admissibility of Other Evidence of Contents**

The original is not required, and other evidence of the contents of a writing, recording, or photograph is admissible if--

(1) **Originals lost or destroyed.**--All originals are lost or have been destroyed, unless the proponent lost or destroyed them in bad faith; or

(2) **Original not obtainable.**--No original can be obtained by any available judicial process or procedure; or

(3) **Original in possession of opponent.**--At a time when an original was under the control of the party against whom offered, that party was put on notice, by the pleadings or otherwise, that the contents would be a subject of proof at the hearing, and that party does not produce the original at the hearing; or

(4) **Collateral matters.**--The writing, recording, or photograph is not closely related to a controlling issue.

### **Rule 1005 Public Records**

The contents of an official record, or of a document authorized to be recorded or filed and actually recorded or filed, including data compilations in any form, if otherwise admissible, may be proved by copy, certified as correct in accordance with rule 902 or testified to be correct by a witness who has compared it with the original. If a copy which complies with the foregoing cannot be obtained by the exercise of reasonable diligence, then other evidence of the contents may be given.

### **Rule 1006 Summaries**

The contents of voluminous writings, recordings, or photographs which cannot conveniently be examined in court may be presented in the form of a chart, summary, or calculation. The originals, or duplicates, shall be made available for examination or copying, or both, by other parties at reasonable time and place. The court may order that they be produced in court.

### **Rule 1007 Testimony or Written Admission of Party**

Contents of writings, recordings, or photographs may be proved by the testimony or deposition of the party against whom offered or by that party's written admission, without accounting for the nonproduction of the original.

### **Rule 1008 Functions of Court and Jury**

When the admissibility of other evidence of contents of writings, recordings, or photographs under these rules depends upon the fulfillment of a condition of fact, the question whether the condition has been fulfilled is ordinarily for the court to determine in accordance with the provisions of rule 104. However, when an issue is raised (a) whether the asserted writing ever existed, or (b) whether another writing, recording, or photograph produced at the trial is the original, or (c) whether other evidence of contents correctly reflects the contents, the issue is for the trier of fact to determine as in the case of other issues of fact.

<http://federalevidence.com/rules-of-evidence>

# SWGDRUG UPDATE

The SWGDRUG Core Committee would like to inform NWAFS members that the SWGDRUG webpage has been updated. New items include:

The latest version of the SWGDRUG Recommendations (version 6.0) is now available, which includes the new Part IIIC containing the recommendations for analysis of clandestine laboratory samples.

The latest revision of the supplemental document demonstrating application of uncertainty of measurement to seized drug weight determinations (SD-3, Revision 2, approved in July 2011),

The searchable mass spectral library was also updated in July 2011.

<http://www.swgdrug.org/>







## The Trace Evidence Symposium 2011 – A Review

### Steven Stone, Washington State Patrol

Tightened budgets across the country have led to creativity being required in ascertaining funds to a conference. One organization using ingenuity in its funding is the American Society of Trace Evidence Examiners (ASTEE) whom held an essay contest (the ending of my essay is below) that rewarded me with a flight and hotel to Kansas City for the 2011 Trace Evidence Symposium. Held over four days, this NIJ sponsored convention had everything a microanalyst could want from fancy microscopes and instrumentation to techniques as simple as sample prep done in a household microwave. A summary of the symposium follows highlighting the workshops over the first day and a half and the general sessions that then followed.



Bill Schneck (WSP) and Rhonda Banks (OSP)  
prepping for a packed day

*“Due to the poor economy, I have only had a couple of chances for attending outside training, and because of an unlucky circumstance, I missed out on one of those opportunities...”*

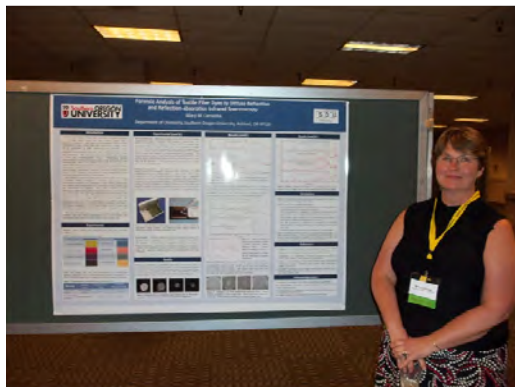
#### *Workshops:*

I was able to attend a productive Paint Database Query (PDQ) class hosted by Tamara Hodgins (RCMP) and Diana Wright (FBI). Both instructors were informative, helpful, and patient, working students through any technical question or issue (such as my laptop refusing to let me use PDQ but allowing me to install it as often as I wanted). The class offered an overview of the use of PDQ and its application in casework.



*General Sessions:*

The plenary and breakout sessions covered not only the core topics of trace evidence (paint, glass, soil, etc.), but included some heated discussion on contextual bias and statistics. At the core seemed to be the idea of what the forensic scientist needs to know and when they need to know it. A healthy discussion on one day led to multiple conversations between attendees regarding how much information a scientist needs to have to remain unbiased in their analysis. Also up for debate was the handling of Bayes statistics in Europe and if their system will be adapted in the U.S. Other highlights included:



**Mary Carrabba (SOU) proudly displays her poster**



**Publication committee member Jennifer Malone (WYCL) during one of the plenary sessions**

*The Edmond Locard Award for Excellence in Trace Evidence:* ASTEE rewarded Scott Ryland (FDLE) for his contributions to trace evidence and forensics in general. It is nearly impossible to train in paint analysis and not read multiple works by Scott.

*Microscopic Trace Evidence: The Overlooked Clue:* Skip Palenik's (Microtrace) keynote speech on the use of trace evidence as a tool for developing investigative leads. Skip highlighted historical cases on Trace as an investigative lead and concluded with a recent one of his.

*The Jig-Saw Murder:* Ray Palmer's (FSS) discussion on a murder in Great Britain that involved the discovery of several body parts in different locations. This focused on fiber identification and creating a link between several items of evidence at the scenes and in the home of the victim (and suspect as well).

*The Strength of Trace Evidence: Two Case Studies Where Unusual Trace Evidence Has Impacted Legal Proceedings:* Kari Pitts's (ChemCentre) talk that included a physical match of a portion of shoe outsole recovered from a suspect car windshield to a victim's shoe.

NWAFS members were in attendance as well with a morning talk from Bill Schneck (WSP) who regaled the convention about gastric contents. Multiple members contributed posters including Kris Gates (OSP), Celeste Grover (OSP), and Mary Carrabba (SOU). Overall, the symposium provided a wide variety of new research, new techniques, healthy debate, and was generally well received by the attendees. Every session outside of the workshops was live-streamed at the time and will be put up on the web at some point in the near future.



Rhonda Banks (OSP) and Celeste Grover (OSP)  
field questions



Susan Wilson (WSP) and Ed Suzuki (WSP)  
during the vendor social

Videos and  
presentations can be  
found at  
[http://projects.nfstc.org/  
trace/](http://projects.nfstc.org/trace/)



Kris Gates (OSP) explains her poster to a fan

# Synthetic Cathinone Information

During the last couple of months there have been several reports and announcements regarding synthetic cathinones, as follows:

The National Drug Intelligence Center issued a new Situation Report: **Synthetic Cathinones (Bath Salts): An Emerging Domestic Threat**

*Executive Summary - The National Drug Intelligence Center (NDIC) assesses with high confidence that the distribution and abuse of synthetic cathinones will increase in the United States in the near term, posing yet another challenge to U.S. law enforcement officials. Poison control centers and medical professionals around the country are increasingly reporting patients suffering adverse physical effects associated with abuse of these drugs, further compounding the problem.*



*Available data and law enforcement reporting suggest increasing levels of synthetic cathinone availability and abuse, but such information is limited and precise levels are unknown. U.S. Customs and Border Protection (CBP) currently tracks seizures of synthetic cathinones at U.S. ports of entry (POEs), but many synthetic cathinone products are disguised or mislabeled to impede detection. Because common field test kits, drug-detecting canines, and routine urine drug screens do not detect synthetic cathinones, law enforcement officials are challenged in interdicting such drugs and prosecuting their manufacturers and distributors.*

<http://www.justice.gov/ndic/pubs44/44571/44571p.pdf>

Office of Diversion Control released a report on these drugs:  
**Background, Data and Analysis of Synthetic Cathinones: Mephedrone (4-MMC), Methyone (MDMC) and 3,4-Methylenedioxypyrovalerone (MDPV)**

USDOJ / DEA  
 Prepared by Office of Diversion Control, Drug and Chemical Evaluation Section; August 2011

[http://www.deadiversion.usdoj.gov/fed\\_regs/rules/2011/HHS%20PDF/background.pdf](http://www.deadiversion.usdoj.gov/fed_regs/rules/2011/HHS%20PDF/background.pdf)



## DEA Moves to Emergency Control Synthetic Stimulants: Agency Will Study Whether To Permanently Control Three Substances

*SEP 07 -- WASHINGTON, D.C. – The United States Drug Enforcement Administration (DEA) is using its emergency scheduling authority to temporarily control three synthetic stimulants (**Mephedrone**, **3,4 methylenedioxypropylamphetamine (MDPV)** and **Methylone**). This action was necessary to protect the public from the imminent hazard posed by these dangerous chemicals. Except as authorized by law, this action will make possessing and selling these chemicals or the products that contain them illegal in the U.S. for at least one year while the DEA and the United States Department of Health and Human Services (DHHS) further study whether these chemicals should be permanently controlled.*

<http://www.justice.gov/dea/pubs/pressrel/pr090711.html>

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Following the announcement from the DEA to emergency control three synthetic cathinones, the official 'notice of intent' from the **Federal Register** can be found at:

<http://www.federalregister.gov/articles/2011/09/08/2011-23012/schedules-of-controlled-substances-temporary-placement-of-three-synthetic-cathinones-into-schedule-i>



# MEETING ANNOUNCEMENTS

## International Association of Bloodstain Pattern Analysts

October 3-7, 2011

Milwaukee, WI

[www.iabpa.org](http://www.iabpa.org)



## California Association of Criminalistics - Fall Seminar

October 24-28, 2011

Sacramento, CA

<http://www.cacnews.org/>

## Association for Crime Scene Reconstruction 2012 Annual Training Conference

February 14-16, 2012

Monterey, CA

<http://www.acsr.org/>



## AAFS 64th Annual Scientific Meeting

Global Research: The Forensic Science Edge

February 20-25, 2012

Atlanta, GA

<http://aafs.org>

## American Chemical Society - Spring 2012

March 25 - 29, 2012

San Diego, CA

[www.acs.org](http://www.acs.org)





# NORTHWEST FALL AMUSEMENTS

## Elk Fest

October 1-2<sup>nd</sup>

Estes Park, CO

<http://elkfest.org/>



## Sun Valley Jazz Festival

October 12-16<sup>th</sup>

Sun Valley, ID

<http://www.sunvalleyjazz.com>



## 18<sup>th</sup> Annual Glacier Jazz Stampede

October 6-9<sup>th</sup>

Kalispell, MT

<http://>

[www.glacierjazzstampede.com/](http://www.glacierjazzstampede.com/)

## Frightened Felons

October 28<sup>th</sup>

Old Idaho Penitentiary, Boise, ID

<http://history.idaho.gov/>



## Trailing of the Sheep Festival

October 7-9<sup>th</sup>

Ketchum & Hailey, ID

<http://www.trailingofthesheep.org/>



## Celebration on the Territorial Thanksgiving Wine Trail

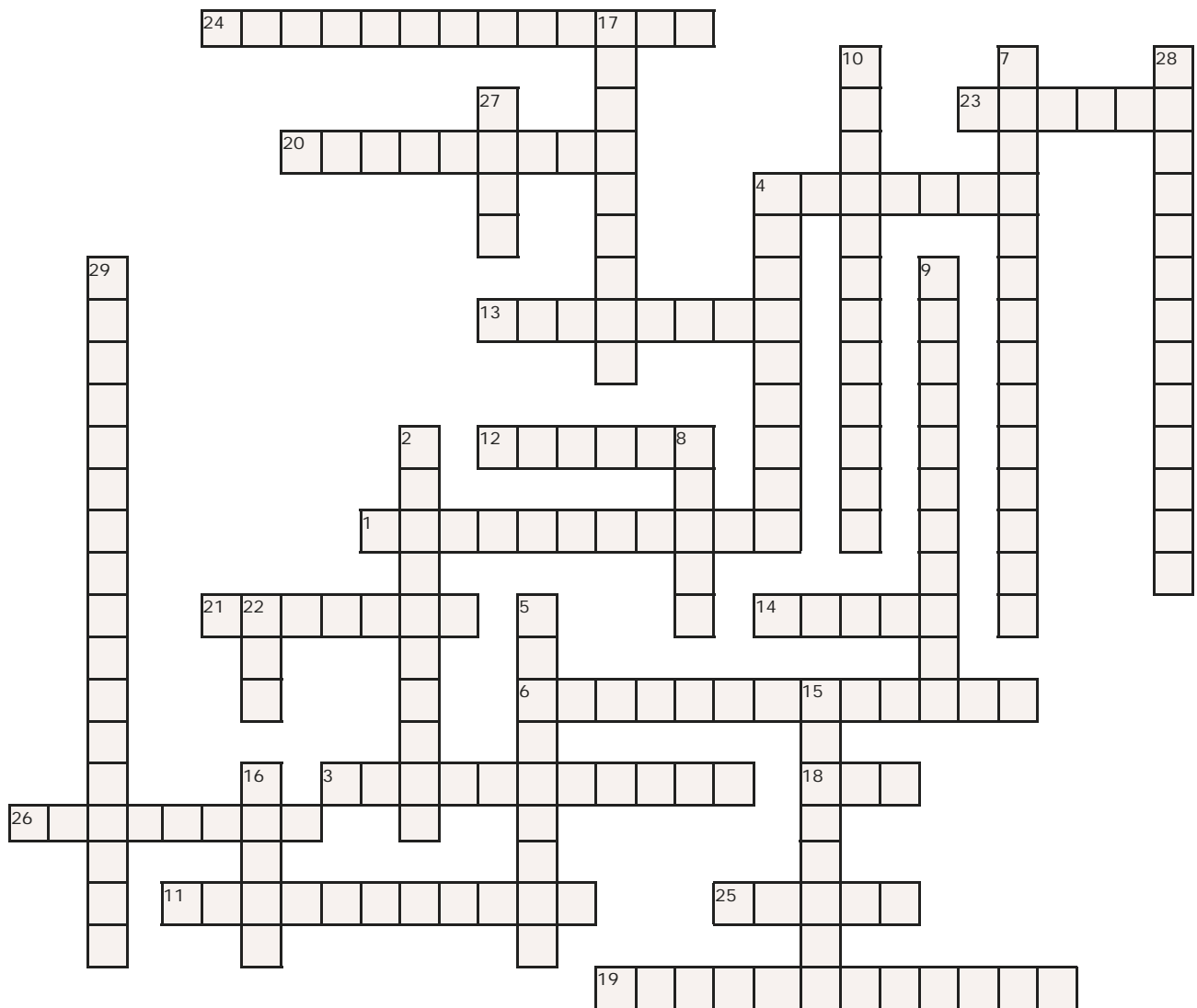
November 24 - 27<sup>th</sup>

<http://www.oregonwinecountry.org>





# Forensic Science Puzzler -- Halloween Edition -- by Jennifer Malone





**Across:**

1. Dynamite was invented in 1866 by this person.
3. Latin for the stiffness of death.
4. Wounds containing these will heal quickly and without the spread of gangrene or other infection.
6. How many bones are in the adult human body?
11. Marks used to identify the manufacturer and caliber of a bullet.
12. The original jack-o-lanterns were carved from this vegetable.
13. Sugar derived from pure sugar goes through a purification process using this animal body part.
14. In the movie E.T., what was E.T. dressed as for Halloween?
18. Was first discovered in 1869 by Swiss Friedrich Mieschler.
19. More germs are spread this way than by kissing.
20. This insect can live up to 9 days without its head.
21. The soft drink Coca-Cola originally contained this illegal drug and was used to cure headaches.
23. During your lifetime you will produce enough of this bodily fluid to fill two swimming pools.
24. When glass breaks, the cracks spread at \_\_\_\_\_ miles/hour.
25. Each person sheds \_\_\_\_\_ lbs. of skin in his/her lifetime.
26. What is the most popular candy for trick-or-treaters?

**Down:**

2. The study of pollen and spores.
4. There are more of these types of cells in your body than your own cells containing DNA.
5. Ted Bundy was a serial killer who was convicted based on what type of forensic evidence?
7. The molecular structure of DNA was first determined by \_\_\_\_\_ in 1953.
8. An average person's yearly fast food intake will contain 12 of these types of hairs.
9. The gravitational pooling of blood.
10. Dactyloscopy refers to the procedure of using which characteristic as a means of identification?
15. In the show It's the Great Pumpkin, Charlie Brown, who does Snoopy battle?
16. During an hour of swimming at a public pool, you will ingest 1/12 a liter of this bodily fluid.
17. Worcestershire sauce is made from these dissolved fish.
22. Industrial hemp contains less than \_\_\_\_\_ percent of THC, the psychoactive component of marijuana.
27. The Ebola virus kills \_\_\_\_\_ out of five people it infects.
28. Dry ice is made from \_\_\_\_\_.
29. The average person consumes \_\_\_\_\_ insects every year of their life.

There are no spaces between words and any numbers are written out completely.

# ***CAPTION THIS!***



The best caption submitted for this photo will win a \$20 gift card of your choice!

[editor@nwafs.org](mailto:editor@nwafs.org)

# ***CAPTION THIS WINNER!***

**Congratulations to our last  
newsletter's winner:**

**Robert Thompson  
National Institute of Standards & Technology**

*“Excellent design doctor, but when I said “LED” I was thinking of something MUCH smaller!”*



**Runner up goes to:**

**Mark Strongman,  
Washington State Patrol Crime Laboratory**

*“Well, the light bulb works...but now we can't see.”*

# FREE REGISTRATION!

Got an interesting technical note, informative article  
or research project?

Make a submission to the NWAFS newsletter, and you could win  
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The officers vote for the “Best Independent Newsletter Submission”  
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sending your submissions to:

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