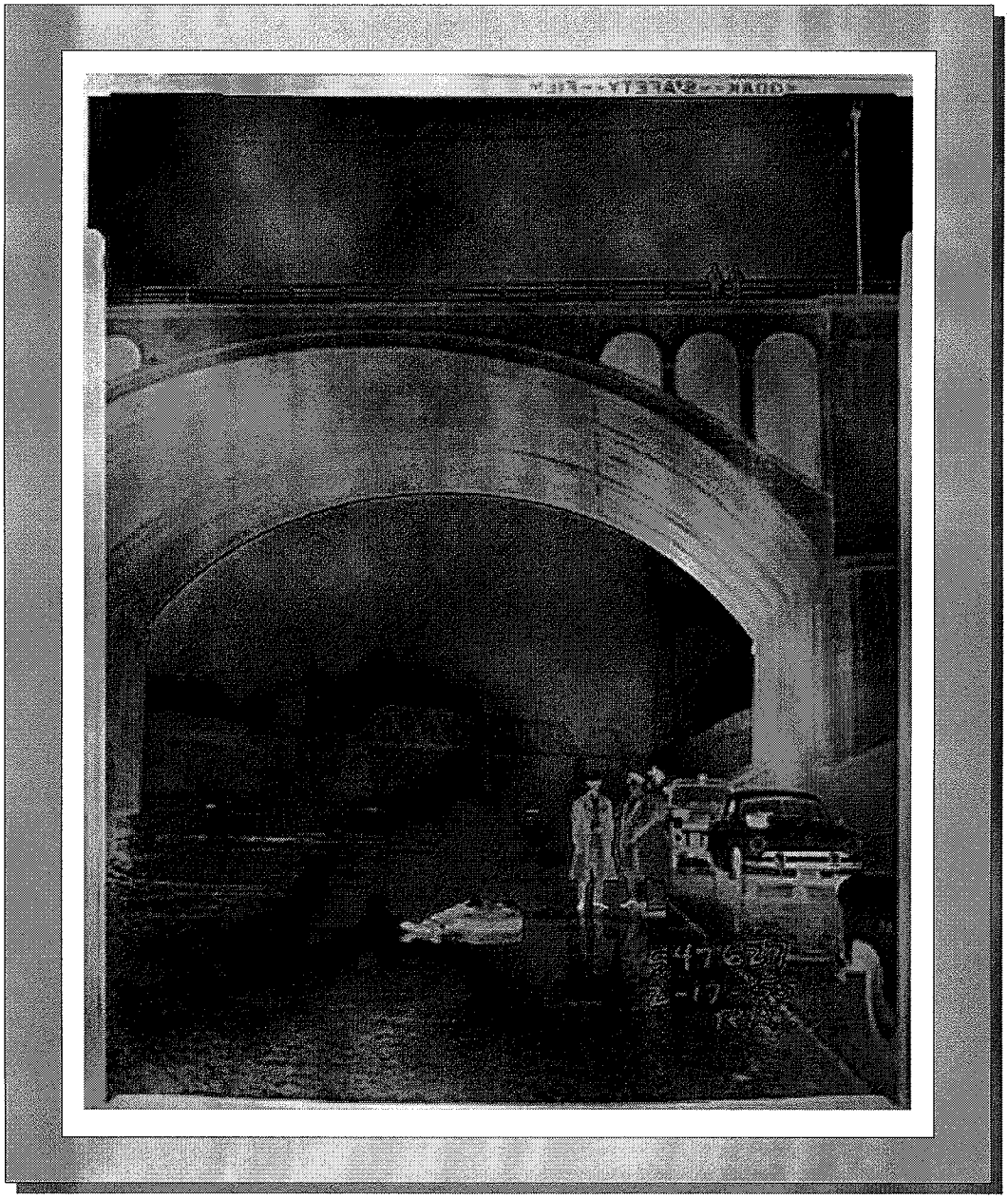
CRIMESCENE

Newsletter of the Northwest Association of Forensic Scientists

FALL 2002 VOLUME 28 ISSUE 3



INSIDE:

PRESIDENT'S MESSAGE TOM **BARNES**

This is my first message as president and I would like to thank all of the friends and colleagues that have supported me during my tenure as a NWAFS member. I would also like to thank everyone who continues to support this Association. The strength of this association is its membership. I would especially like to thank Jay Henry for his leadership during his tenure as president. I would also like to thank Julie Doerr (membership secretary) and Matt Noedel (editorial secretary). They have all committed hundreds of hours of their time to make this a better organization. At the same time let us welcome and support Dan Alessio (membership), Josh Spatola (editorial) and Stuart Jacobson (member-at-large) as they attempt to fill some very large shoes.

I would also like to thank Don Wyckoff and all those who helped with the Fall meeting in Coeur 'd Alene. It wasn't a huge meeting but it was a good meeting. The accommodations, food, workshops, interactions with vendors and discussions were excellent. The question arose again as to what we can do to increase attendance at our meetings. We have been losing quite a bit of money over the last three years. There is not a problem losing money on some of our meetings but we cannot continue to lose money on most of our meetings. (Are we following the stock market or is the stock market following the NWAFS?) Do we want to go to one meeting per year? Do we want to change meeting formats? What options are available? The board has set up an ad hoc committee to evaluate our past meetings, competition from other meetings, which workshops worked and which didn't, costs, etc. Our goal is to develop a business plan for future meetings. If you have any ideas or information please let me know.

We also need to change the way we establish a quorum. There have been several meetings in the last couple of years where we have not been able conduct business due to the lack of a quorum. I have recently received a report from the ad hoc committee looking into procedural changes for an ethics investigation. I anticipate future bylaw votes on both of these issues. I would also like to work on position descriptions for our board positions. We need to provide each potential board member with list of the expectations for that position. Looks like we're in for a busy year.

The strength of this association is its membership.

In the coming year we will have two great locations for our meetings. Our Spring meeting is a joint meeting with CAC in Reno. Joint meetings are a great way to expand upon the regional association experience, with new ideas, new friends and a great location. The Fall meeting is in Portland and we are already contacting vendors, arranging workshops and preparing to improve upon our last meeting. If you have any suggestions for either of the meetings, please contact the program coordinators:

Suzanne Harmon, Reno
(*sharmon@mail.co.washoe.nv.us*)

Rhonda Banks, Portland
(*rhonda.banks@state.or.us*)

I hope to see you at one or both of the meetings.

Have a safe and happy holiday.

-Tom Barnes

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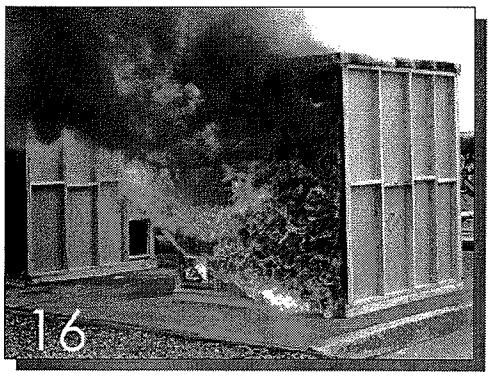
NOVEMBER 2002



Inside:

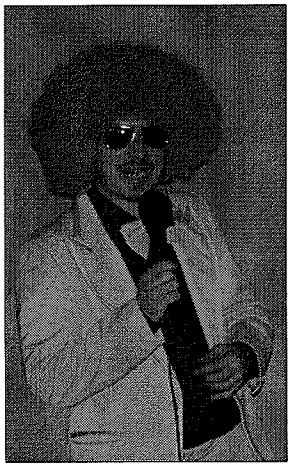
Our editorial secretary-elect reports on a recent fire investigation workshop and learns valuable differences between investigation at the scene and in

CRIMESCENE is the official publication of the Northwest Association of Forensic Scientists. It is published four times a year in the months of February, May, August, and November. 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. While not currently required, plese submit material for publication in Microsoft Word for Windows format as an e-mail attachment or on a 3.5" floppy disk. For more information regarding the Newsletter or to make a submission please contact editorial secretary-elect, Joshua S. Spatola at the California Department of Justice, Central Valley Crime Laboratory, 1306 Hughes Lane, Ripon, CA, 95366 (phone: 209.599.1418 / fax: 209.599.1240 / email: josh.spatola@doj.ca.gov).

EDITOR'S SECTION JOSH SPATOLA

A FIRST NOTE

Greetings from the desk of the NWAFS Editorial Secretary (elect). If you are reading this message then the transition from Editorial Secretary (past) to Editorial Secretary (elect) is nearly complete. This is my first attempt at newsletter organization, publishing, and distribution so please bear with the chaotic, "under construction," atmosphere I have created within the pages of CRIME SCENE.



For those of you who do not know me, my name is Josh Spatola and I am a Criminalist with the California Department of Justice, Central Valley Regional Crime Laboratory. I have been employed there for a little over two years. In general, I have worked for the California Department of Justice for almost five years as a Student Research Assistant at the California Criminalistics Institute (CCI) and as a Criminalist in the Toxicology section as well as the aforementioned Central Valley Lab. I have been a provisional member of NWAFS for almost two years. I am also a member of the California Association of Criminalists and, while employed with the Toxicology section, was a member of the California Association of Toxicologists. I self-nominated and was elected editorial secretary at the Fall 2002 NWAFS Conference and am excited about performing the editorial duties involved with my newly elected position.

I am eternally grateful to the previous editorial secretary, Matthew Noedel who has helped me throughout the entire process and who I will beg, borrow, and steal from during my tenure as editorial secretary. He was a tremendous help during my first issue of the newsletter by lending me his knowledge and experience. Matt has dedicated a great deal of time and effort to continually produce an interesting and useful association newsletter and I hope to continue in that tradition.

The NWAFS covers a large region of the forensic science community, and within that community lies a wealth of knowledge and experience. As editorial secretary I hope to tap into the resource that is "our membership" in order to provide relevant and informative topics of interest. Article submissions are welcomed and encouraged along with comments you may have regarding anything that is published in the newsletter. This includes content as well as design. If enough comments come my way, a "letters to the editor" section can be included to demonstrate communication between the reading membership and those who submit information.

As editorial secretary I hope to tap into the resource that is "our membership" in order to provide relevant and informative topics

One of the greatest strengths of the NWAFS newsletter is the casual atmosphere (see editor's picture above). This helps to make CRIME SCENE both *informational* as well as *informal*; exceptional dual attributes that create an environment conducive to sharing and distributing knowledge. I hope to continue this practice to the best of my ability.

Lastly, I'd like to thank you, the reader, without whom it would be pointless to even publish a newsletter. Thanks for reading and I hope you enjoy the issue.

- Josh Spatola
Josh.Spatola@doj.ca.gov

ODDITIES, ETC.

THE NEWSWORTHY

PIMA COUNTY, Ariz. - One of Arizona's top fugitives tried to surrender early this week, but was turned away at the prison doors.

Drug convict Scott A. Kline said he came back to Tucson from out of state when he learned his name was on a most-wanted list, and decided to turn himself in.

Kline couldn't reach the Tucson office of the U.S. Marshals Service by phone, so he arranged the time and place of his arrest through the Phoenix office.

The appointed time and place was 9 p.m. at the Federal Correctional Institution, Kline said. But when a friend dropped him off at the prison, no one from the U.S. Marshals Service was there to arrest him, he said.

"I walked right into the federal prison, or tried to," Kline said, "but they wouldn't let me in."

The Marshals Service wants to arrange another surrender as soon as possible.

- Arizona Daily Star

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MANTECA, CA - A burglar evading police was arrested after he broke into a second house, locked its residents out and stole a bottle of water, authorities said.

"It may have been because he was exhausted," police Sgt. Tony Souza said. "He had been running from home to home trying to flee."

Police arrested Brian William Cook, 21, after he allegedly tried to get a ride from the residents of the second house.

"For some reason they decided they were going to give him a ride," Souza said. "Older individuals in the community, they trust people."

Police and sheriff's deputies arrived and arrested Cook after another short foot chase.

- Modesto Bee

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CHATTANOOGA, TENN. - Police told the city's WTVC-TV in October that they had arrested Rudy Raines for possession of about a pound of marijuana, after Raines allegedly walked nonchalantly into a Fast Food and Fuel convenience store, past officer David Ashley, and uninhibitedly placed a stash of marijuana into the store's microwave oven because, he said, he needed to dry it out. Raines was arrested, along with another man sleeping in Raines' car in the parking lot.

- Associated Press

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ATLANTA, GA - Deanna Robinson and her insurance company filed a lawsuit in Atlanta in August against Kellogg's, alleging that the poor design of Pop Tarts is the reason one burst into flames in her toaster two years ago, igniting a house fire that did more than $10,000 in damage. Kellogg's has had to defend Pop Tarts' flammability before, in New Jersey and Ohio lawsuits (which it settled) and against newspaper columnist Dave Barry, who wrote of his experience of inducing 30-inch-high flames from Pop Tarts in his own toaster.

- Fulton County Daily Record

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BROOKSVILLE, FL - Jimmy Batten returned home early Monday to find a man, shirtless and shoeless, sitting in his living room, a Winchester rifle nearby. The man rocked and then slumped over.

Batten walked in and kicked the rifle away. He noticed that the middle toe on the man's left foot was missing and called 911.

At the hospital, Sean Todd Duval, 26, told officials he knew Batten had a lot of guns and planned to steal and sell some of them.

Duval told authorities that the first rifle he saw rested in a sling on a saddle in the living room. He said he took the gun, pointed at the floor and it misfired, taking off his toe.

Batten said deputies returned to search for Duval's toe. "I told them they ain't going to find a toe," Batten said. "When you shoot with one of my rifles, you're not going to find too much left."

- St. Petersburg Times

LABORATORY TIPS MICROSCOPY

REFRACTIVE INDEX AND CONTRAST

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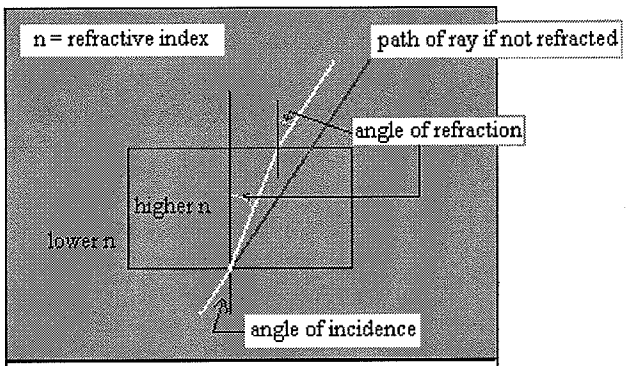
The practical microscopist has a bag of tricks for actually finding something small – implying contrast – while still seeing detail and being able to make optical measurements. A key tool in this bag of tricks is an understanding of refraction and reflection of light.

Refraction

When light passes through a vacuum into a material, the wave front of the light is slowed down because of the interaction of light and matter. The ratio of the speed of light in a vacuum (i.e., speed of the wave front) to the speed of light in a given material is called the refractive index, and is a property of the material. Light passing through one material into another slows down when entering into a material of higher refractive index, or speeds up when entering a material of lower refractive index.

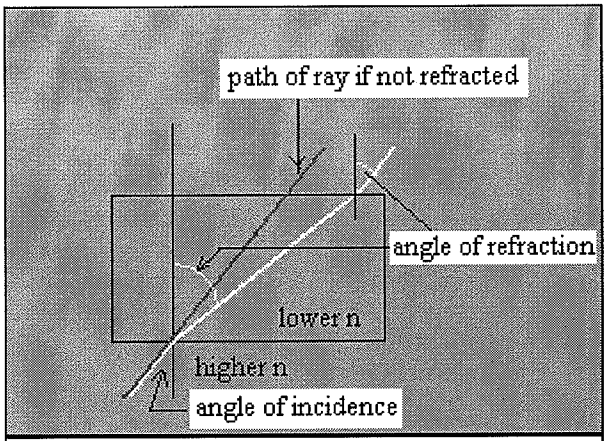


Refraction of light into a higher index medium

If the light ray enters the interface between two materials at an angle other than perpendicular, the light ray bends in the second material to a degree depending upon the angle of incidence and the refractive index of each material. The details of this dependence are expressed as Snell's Law, and can be found in a physics text and most books about microscopy. In a nutshell, the light bends into the material of higher refractive index, and bends out to a material of lower refractive index. With respect to a perpendicular to the surface, the angle decreases and increases respectively.

Contrast

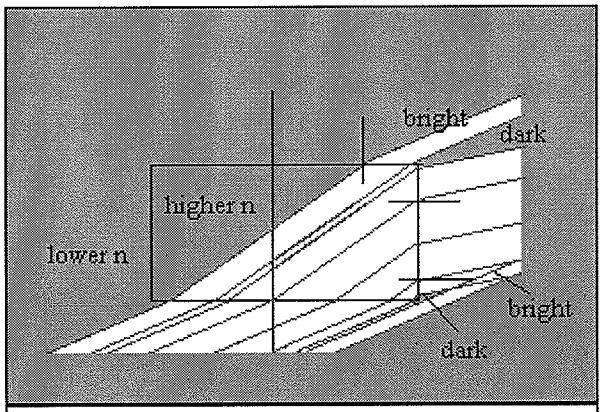
The bending of light when light passes through one material into another material having a different refractive index results in greater brightness where the light is bending towards, and shadow where the light is bending away, and



Refraction of light into a lower index medium

results in contrast. The greater the difference between the refractive indices of the materials, the greater the contrast.

However if both materials have the same refractive index, the light does not bend, and there is no contrast. Unless there is a difference in color or opacity, a particle of a certain refractive index value will disappear if it is surrounded by another material having the same refractive index, and an interface between the two will not be visible.



Contrast arising from refraction: note the dark and bright areas (brighter where rays overlap). When focusing into the edge, light goes into the higher n.

In order to observe internal features that would be obscured by surface characteristics, microscopists mount samples in liquids of refractive index close to the refractive index of the surface layer so that it would "disappear". Mounting media for human hair comparison are typically close to the refractive index of the cuticle layer, which is the scaly outer layer, in order to observe the characteristics of the inner

layers (cortex and medulla).

Another application is finding inclusions in polymers. The types and ratios of anti-oxidant and delustering inclusions can sometimes distinguish between the same formulations prepared by different manufacturers. We looked at some strip (vs. extruded) polyolefin fibers from trampolines this way, mounting a melt of the fiber in a matching refractive index liquid. This allowed us to do a particle count of tiny grains of zinc oxide.

A low-contrast mounting medium is also used for measuring optical properties that are best measured with a minimum of scattering. Mounting media for conoscopy (observing interference figures of crystals), or even birefringence determinations, are usually of refractive index matching or near that of the sample.

Measuring refractive index of particles and fibers

One of the most practical and most commonly used methods for determining the refractive index of things small is the immersion method of refractive index matching. Calibrated refractive index liquids are used to determine the refractive indices of solids, and calibrated solids (glass beads and other materials) can be used to determine the refractive indices of liquids.

Immersion methods employ the phenomenon of particles appearing to disappear in liquids of matching refractive index. When two materials have the same refractive index, there is no contrast between them and no visible boundary. If a colored particle is immersed in a liquid of matching refractive index, a borderless color seems to float in the liquid. Conversely, if the particle "disappears", its refractive index matches that of the liquid.

To use this technique, the microscopist must first determine whether a particle or fiber is higher or lower in refractive index than the liquid in which it is first mounted. It is also useful to have some idea of how much higher or lower. Greater contrast means the indices are farther apart, and less contrast, closer together. The higher index material appears brighter, as if concentrating the light; the lower index material appears darker.

You can see this for yourself if you hold a glass of water up to the light. The part filled with water is brighter, and the part above the water less so. If you hold the glass below the light and look up through the water to the surface, towards the light, the surface looks dark. However, if you hold the glass above the light and look down into the water, the surface looks bright.

The bright line at the boundary of a particle immersed in a liquid of different refractive index is called the Becke line. Light bends into the material of higher refractive index, and bends out again when it emerges. Under the microscope, if you bring the objective and the sample closer together, the Becke line moves towards the lower refractive index material. When you take the objective and the sample further apart, the Becke line moves into the higher refractive index medium. You can think of this as tracing the path of a ray that enters at the bottom of the sample (where the Becke line is closest to the lower index material), and angles into the material of higher index as you focus higher up. This is somewhat simplified, but may be helpful in picturing how it works.

Some complications:

1. Refraction is not the only thing happening at an interface; reflection and absorbance also occur, and can complicate observations. White light is usually used rather than monochromatic, and the light is not coherent but approaches from many angles and directions.

a. Absorbance in strongly colored materials can make it very hard to see a Becke line, and because the absorbance itself provides contrast, can make it difficult to know when a refractive index match is near. Sometimes using a colored filter helps.

b. External Reflection (glare): When light enters a medium of different refractive index, some of the light is transmitted, and refracts; other light is reflected, producing glare. This is not usually a problem in a transmitted light microscope, because most of the reflected light will be reflected back in the direction of the light source, not into the optics. Sources of glare such as overhead light reflected from a microscope slide and from shiny parts of the microscope housing, and reflection from films on the optics, are easily eliminated once you figure out what they are. However, light that is reflected after being refracted can be troublesome.

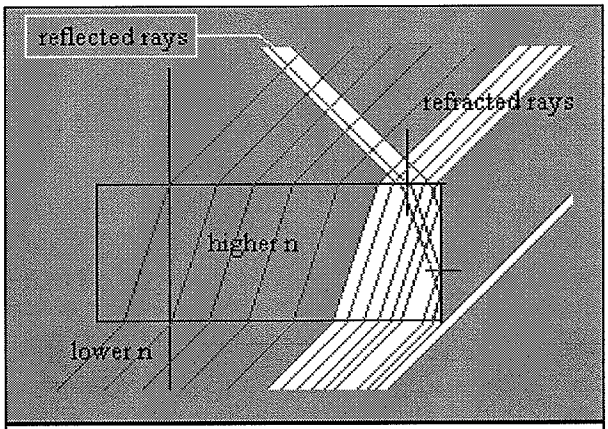
c. Internal reflection: The closer the incident beam to perpendicular with the surface, the more light is refracted. The closer the incident beam is to grazing the surface, the more light is reflected. When light enters a medium of higher refractive index, there is a refracted (transmitted) ray for almost every angle of incidence.

However, when light enters a medium of lower refractive index, there is a limiting angle. If the refracted ray for a certain angle of incidence would be greater than 90°, (i.e., would not enter the second medium), no refraction takes place, only reflection. This is what can happen in a medium of higher refractive index that a light beam has entered from a lower index medium such as air, especially when the geometry of the particle is angular, spherical or irregular.

When the refracted beam passes through the material to emerge at an interface, it again refracts. Entering the medium of higher index, it angles in; emerging back into the medium of lower index, it angles out. When the angle out would exceed the limiting angle, however, the light beam instead

reflects at the interface. The internally reflected beam can either emerge at another interface, or continue to reflect internally. The latter is a special case referred to as total internal reflection, and is the basis for fiber optics. It is used in the ATR accessory (Attenuated Total Reflectance) in infrared spectroscopy. It is why the medulla in hairs can be opaque (the medulla traps the light), and why certain inclusions in polymers appear as dark specks even if they should be big enough to be resolved. Most of the time, though, the internally reflected beam emerges somewhere else.

To understand internal reflection, let us think of the ray of light originating within the medium of higher refractive index and striking an interface with a medium of lower index. A ray can strike the side of a particle, be reflected to another interface, then emerge, refracted, into the lower index medium around the particle. The angle of incidence, the difference in refractive index, and the geometry of the particle together determine how the ray will eventually emerge. This ray can add contrast – sometimes surprisingly strong – that does not arise from a refractive index difference alone. When it appears at a refractive index interface, this beam can move in a different direction than the Becke line when the microscope is focused up and down. This is why the Becke line along some edges can be difficult to read, and may appear to be going strongly both into the particle and out of the particle at the same time.

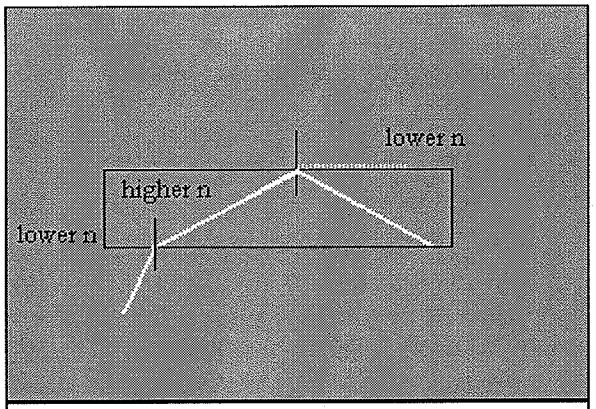


Rays reflected from an edge emerge in a direction opposite that of the refracted rays

It may still be possible to make a reliable refractive index determination using another edge of the particle, or to minimize the effects of geometry by "rolling" the particle so that the incident light impinges at a different angle. "Rolling" the particle can be done by moving the cover slip with a pencil eraser.

Interference fringes and iridescence are special cases of reflection and refraction. These phenomena result when some light is reflected from a surface and some light enters the material, only to be reflected at a second, usually parallel, surface beneath. The ray from the first reflection and the ray from the second reflection may emerge in different phases, giving rise to interference colors with white light, and to dark and bright bands with monochromatic light. Birefringence colors observed with crossed polars are a special case of interference, arising from internal asymmetry - analogous to molecular asymmetry - and will be discussed in a future Lab Tip. A microscopist sometimes encounters interference colors even without crossed polars, however, when there is a thin film of one material covering another, or when there is a sheath-core structure on a fiber. This happens infrequently in routine work, and can be puzzling when it does occur. The microscopist sees it often, though, when microscope slides are stuck together.

Note regarding reflection and refraction:
The closer an incident beam is to perpendicular, the greater is the refracted component in relation to the reflected component. This ratio changes gradually until at an angle of incidence close to the grazing angle, the reflected component predominates. At the critical angle, where the angle of refraction would be 90°, it is so weak that it disappears, and only the reflected ray is observed. This is the limiting angle discussed with total internal reflection.



Internal reflection of a ray refracted into a higher refractive index medium. Had the refracted ray not disappeared, it would have emerged at the grazing angle (dotted line).

Note regarding refractive index of liquids:
A refractometer would usually be the method of choice for determining the refractive index of a liquid, but if there is such a small amount that it must all be preserved, the immersion method would be the better choice. If you don't have a refractometer, the immersion method is a good backup. You then need to calibrate your refractive index oils using calibrated solids, or have your refractive index oils calibrated elsewhere. As the bottles of refractive index oils are repeatedly opened, some of the liquid mixture evaporates. Not every component of the mixture evaporates

at the same rate, so the oils will change over time and must be re-calibrated periodically. This is not a problem with silicone oils (used with temperature variation methods), which are homogenous.

Notes regarding refractive index "matches" in white light:

1. Strictly speaking, a particle will truly disappear in a liquid only if monochromatic light is used, or if the optical dispersion of particle and liquid are the same. Optical dispersion is the variation of refractive index with wavelength. Unless the dispersion is also the same, which would be rare, the particle and liquid have the same refractive index at one wavelength only.

Thus, in white light, subtle bands of colored light appear at the Becke line, although the color may not be evident unless the microscope is set up for it (as described earlier). These bands consist of the not-exactly-matching wavelengths. The wider the difference in dispersion, the more prominent the bands. In focusing up and down on the particle, the microscopist may observe the Becke line simultaneously entering and leaving the particle. The confusion this may cause can be reduced by using a colored filter, usually an orange filter (sodium "D" line) or sometimes a green filter. A blue filter will work if that is what is available, but may skew the refractive index reading away from the sodium "D" line standard towards the refractive index at lower wavelengths.

Notes regarding optical dispersion (variation of refractive index with wavelength):

1. Optical dispersion of liquids can be measured using a refractometer. The method is usually given in the refractometer instructions.

2. Optical dispersion of large solids can also be measured using a refractometer; this is rarely useful in forensic samples, but is of interest if you wish to make your own solid refractive index standards using a piece of glass. You can chip off pieces of the glass after measuring its index, then check for homogeneity using immersion liquids.

3. For particulate and fibrous solids, the optical dispersion can instead be measured with reference to an immersion liquid of known dispersion having a match with the solid at some visible wavelength.

a. When used with phase contrast microscope lenses and monochromatic light, this is a sensitive method for comparing glass, and is the basis for the GRIM method (a video microscopy method of measuring refractive index).

b. When used with white light, immersion in a liquid of matching refractive index (that is, matching at one wavelength) permits observation of dispersion colors at the refracting surfaces of the solid. Refracting surfaces include the edges, and any boundaries with inclusions or with other components having a different refractive index. Dispersion colors can usually be seen only when the microscope is set up to minimize the bright white light passing through the sample, which swamps out the delicate colored dispersed light.

The common methods either block the central portion of the light beam, or let in only a narrow central beam. Darkfield and pseudo-darkfield (discussed in a previous Lab Tip) involve blocking the central beam below the condenser. Dispersion staining using a central stop blocks the central beam in the objective. Dispersion staining using an annular stop allows only a narrow central beam into the objective. Phase contrast involves blocking the central beam to allow a ring of light below the condenser, and retards either a corresponding ring of light in the condenser or retards the part surrounding the ring. Contrast is produced by the interference of the light that goes through the ring (unaffected by the sample) and the light, which goes through the sample and not through the ring. This brings up interference, another key topic in microscopy, to be discussed another time.

Chesterine Cwiklik
Cwiklik & Associates

EQUATIONS:

Definition of Refractive Index (n)

$$n = c/v$$

where c = velocity of light in a vacuum and v = phase velocity of light passing through a material (velocity of the wave of light, not photon velocity). It follows that:

$$n2/n1 = v2/v1$$

where n = refractive index and v = velocity of light

Snell's Law of Refraction

Sin (angle of incidence) / Sin (angle of refraction) = n2/n1

where n1 and n2 = the refractive index of the first and second media respectively. The angle of incidence is measured with respect to the perpendicular of the surface.

Lab Tips is a column sponsored by the Pacific Coast Forensic Science Institute. We'd like to know what you think, and would welcome questions and comments about this article.

So Where Is The Rest Of The Information?

Part II. The Invisible Web

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Without a doubt, the World Wide Web has transformed the way we store and find information, and search engines such as Google can provide excellent access to pertinent information. But, as reported in Part I of this series, there is much information in the world that is either not on the Web, or not directly accessible through a general search engine. The major categories of information beyond this "surface web" are:

1. hard copy, non digitized books and periodicals - both current and old,
2. commercial online database systems used by information professionals to find data and peer-reviewed literature (e.g. Dialog, Lexis Nexis, Factiva), and
3. the "Invisible Web", or that part of the Web not penetrable by search engines.

The Invisible Web can be defined as information on the World Wide Web that is not available through general-purpose search engines, and thus not easily accessible by most Web searchers. The complete explanation of why this Invisible Web exists is beyond the scope of this article; the various technical, economic and social reasons for its existence are covered very well in **The Invisible Web: Uncovering Information Sources Search Engines Can't See,** by Sherman and Price (Sherman and Price, 2001). The discussion here will be limited to one of the most important types of data on the Web that is invisible to search engines—the information in databases.

Much of the most detailed and authoritative information on the Web is found in the form of databases with Web interfaces. Only a direct interaction with the database via a query using this Web form will access the contents of the database. A search engine cannot penetrate it. Because information in Invisible Web databases is so voluminous and of such high quality, a serious information seeker cannot afford to overlook it.

A report by BrightPlanet (Bergman) stated that the 60 largest sites on the deep Web (an alternate term for sites with information not found by search engines) "contain about 750 terabytes of information–sufficient by themselves to exceed the size of the surface Web forty times." As an example, one of the largest web sites found by Bergman is RTK Net (http://www.rtk.net/), the Right-to-Know Network. It provides access to many government databases on the environment, including CERCLIS (Superfund sites and data) and the Toxic Release Inventory (EPA's database of releases of toxic chemicals from manufacturing facilities). The vast amount of extremely useful data within this database will not be found through a search engine.

Aside from its sheer volume, by its very nature the information in Invisible Web databases is of great potential value. In general, databases contain very specialized information, are created by experts, or come from authoritative sources. Some are the equivalent of everyday paper reference materials such as the phone book. For finding a phone number or address, a specialized directory such as Anywho.Com (http://www.anywho.com/) or Infospace (http://www.infospace.com/) is obviously much more effective than a search engine.

The following are some examples of Invisible Web databases that could be useful in forensic science:

- NIST Chemistry WebBook: http://webbook.nist.gov/chemistry/
- Canadian Poisonous Plants Information System Canada: http://sis.agr.ca/brd/poisonpl/

- Fatality Analysis Reporting System (FARS): http://www-fars.nhtsa.dot.gov/. *(See an overview of FARS at http://www-nrd.nhtsa.dot.gov/departments/nrd-30/ncsa/FARS.html)*
- ASTM International Directory of Testing Laboratories: http://astm.365media.com/astm/labs/.
- WISQARS™ - customized reports of injury-related data from the CDC: http://www.cdc.gov/ncipc/wisqars/.
- Federal Rules of Evidence: http://www.law.cornell.edu/rules/fre/overview.html.
- CDC Public Health Image Library: http://phil.cdc.gov/phil/default.asp.
- Solvents Database from the National Center for Manufacturing Sciences: http://solvdb.ncms.org/index.html

Real-time databases are also part of the Invisible Web. Two examples are: Flight Tracker (http://www.trip.com/trs/trip/flighttracker/flight_tracker_home.xsl), for tracking commercial airline flights, and AIR*Now* (http://www.epa.gov/airnow/where/index.html), for finding current local air quality from the EPA.

At this point a searcher with a specific question might wonder how to find a relevant Invisible Web database in order to query it. General search engines can be appropriate for finding a database, even though they wouldn't be able to find the specific information within that database. One good strategy is to search in very general terms for a type of resource rather than for the precise information needed. For example, a Google search for "federal judges directory" results in finding a link to the Federal Judges Biographical Database at http://air.fjc.gov/history/jabout_frm.html. This database's specific query system can then be used to find specific facts such as a list of federal judges who have been terminated because of impeachment and conviction.

Another way to find useful Invisible Web databases is through the following directories, which are collections of links chosen by information professionals and organized into topics.

- InvisibleWeb.com: http://www.invisibleweb.com/
- The Invisible Web Directory: http://www.invisible-web.net/
- Librarians' Index to the Internet: http://www.lii.org/
- Direct Search: http://www.freepint.com/gary/direct.htm

The high quality information in Invisible Web databases is invisible to search engines, but not to searchers who know how to find it.

References:

Bergman, Michael K., "The Deep Web: Surfacing Hidden Value", BrightPlanet White Paper. Retrieved from http://www.brightplanet.com/deepcontent/tutorials/DeepWeb/index.asp on August 20, 2002.

Sherman, Chris and Gary Price, 2001, *The Invisible Web: Uncovering Information Sources Search Engines Can't See,* Medford, NJ: CyberAge Books.

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About the author:

Sue Eipert provides business and scientific research services, using professional proprietary databases as well as the visible and invisible Web to fulfill the information needs of clients, including engineering companies, environmental consultants, forensics professionals, expert witnesses, manufacturers and Internet e-commerce companies.

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http://www.eipertinfo.com/

Interpreting a Group of Bloodstains Assisted by a Simple Tracing Overlay Method

Linda McGarvey and Chesterine Cwiklik
Cwiklik & Associates
2400 Sixth Avenue South #257
Seattle, WA 98134

This paper will illustrate the use of a simple tracing overlay method used to assist in interpreting a small group of bloodstains present on clothing evidence.

The case in question involved a very bloody scene. The victim was bludgeoned to death with a variety of objects, including porcelain statues. The identity of the assailant was not in question, rather his intent. The prosecution theory was that there was a protracted and brutal beating, which was intentional and pre-meditated, whereas the defense theory was that the victim initiated a homosexual encounter and that the murder was committed in the "heat of passion". In trying to determine what really happened, we examined a number of items including the victim's clothing.

The victim wore a white shirt with a knit sweater on top and a tank top underneath and a pair of black pants and undershorts. All of the clothing was heavily bloodstained, with many of the stains soaking through all layers. Particularly interesting was an aggregate of stains on the upper right front between the hip and the fly. They included the stain on the pocket of the pants and corresponding stains on the white shirt and undershorts. These stains and their location were of particular interest because of the question of sexual activity. It was important to learn as much as we could about how they were deposited and by whom.

We considered several possibilities that might explain how the stains were deposited:

1. someone at the medical examiner's office had deposited the blood while handling the body,
2. the defendant or victim had reached into the pants through the pocket,
3. the defendant or the victim had reached beneath the pants,
4. blood from the carpet had been transferred onto the clothing and
5. the pants were open and then zipped and buttoned before the blows that produced the spatter occurred.

Photographs of the scene were examined to assist in supporting or casting doubt upon these theories.

We determined that the stain on the pant's pocket (*Figure 1*) was deposited from the inside, on the surface that would be next to the undershorts or skin. It did not originate from inside the pocket,

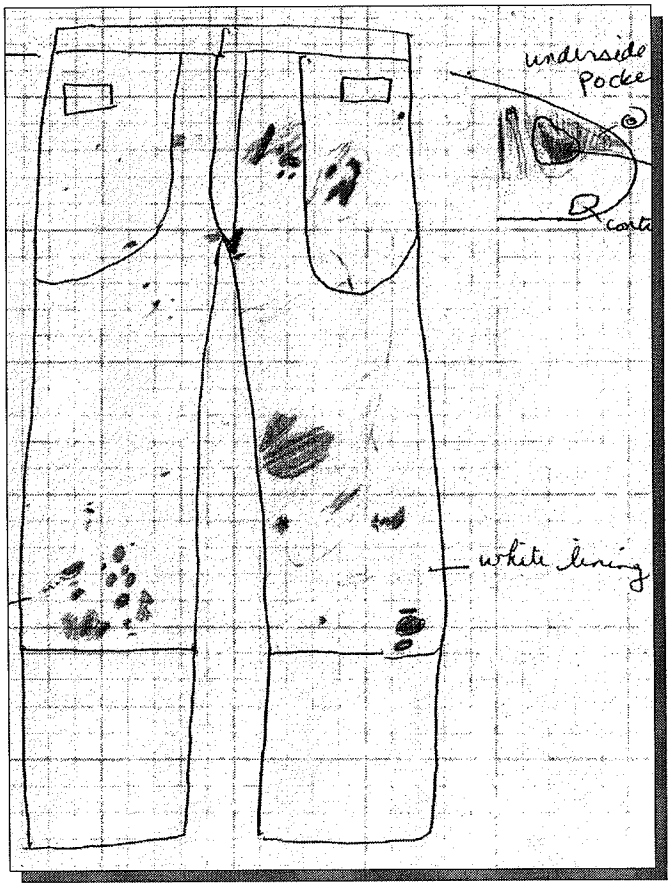


Figure 1.

ruling out the bloody hand-in-the-pocket theory. Nor did it originate from the outside of the pants as the majority of the stains had, ruling out the transfer-from-the-carpet-to-pants theory. In order for this stain to be where it was either the pants had been open at some point, or someone had reached into the pants with bloody hands. These were the two hypotheses remaining for us to consider.

The stain on the white shirt (*Figure 2*) was diffuse and ran along the fibers, making it impossible to determine whether the stain originated from the inside or the outside.

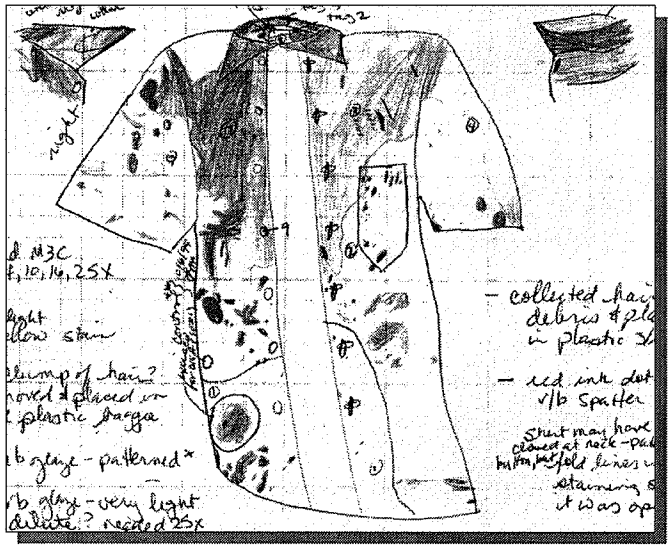


Figure 2.

There was no bloodspatter around this stain, although the shirt was blood spattered above the waist level and the pants were blood spattered in the front. Thus, the shirt was tucked in during the blows that produced the spatter. A photograph taken of the victim at the scene as the body was being turned over, clearly showed the white shirt with the flap exposed and the stain visible, making it unlikely that handling of the body had transferred it. The possibility that the stain transferred directly to the shirt from the carpet seemed unlikely since no other staining was observed in that area, and was ruled out by the correspondence of the shirt stain with similar stains on the undershorts and the interior, but not the exterior, of the pants. The lack of injury to the body in that area ruled out origin from a bleeding wound.

The stain on the undershorts (*Figure 3*) was also diffuse. Although we could not determine what side the stain had been deposited from, there was no corresponding injury to the victim's right hip area that would account for the stain being deposited from the inside.

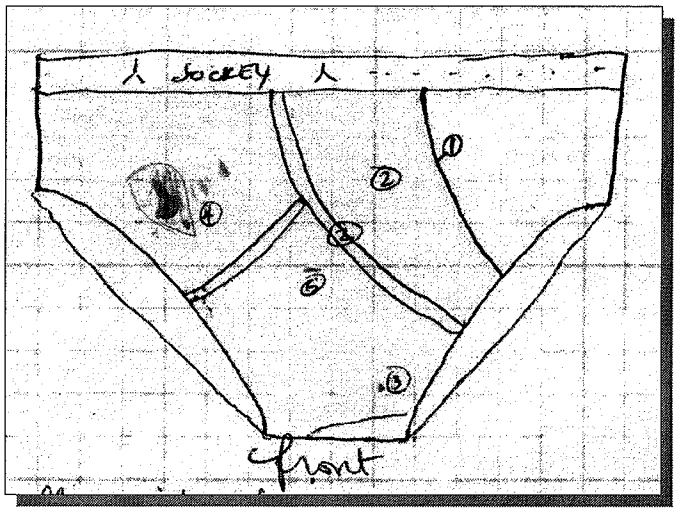


Figure 3.

Two small droplets of blood were found on the inside surface of the belt. They were found on a bumpy leather surface with the tiny depressions in the same size range as the droplets. This hindered any interpretation. Since there were only two droplets, there was no pattern that might have provided a clue.

We sampled the stains from the undershorts, white shirt and the pant's pocket for DNA testing and sent the sample to Genelex, a DNA testing laboratory. The stain on the undershorts was attributed to the defendant. No testing was performed on the other stains in the interest of time. This supported the hypothesis that the defendant had reached into the pants, but whether the pants were open or closed at that point could not be determined. We were ready to write the report and interpret the bloodstains as described above.

While writing the report and comparing the

diagrams one of us had made of the victim's clothing, we realized that there was no corresponding bloodstain on the tank top (*Figure 4*).

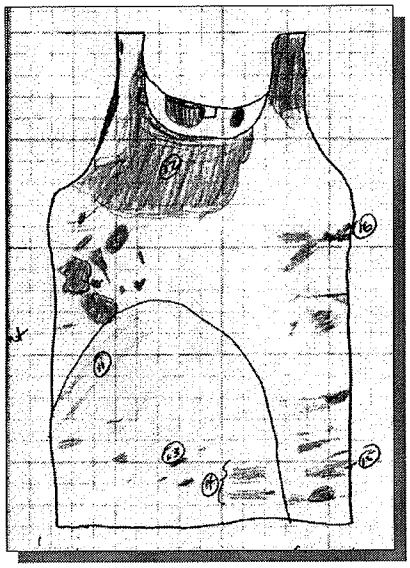


Figure 4.

The diagrams also showed an area of apparent urine staining on the tank top, shirt and undershorts. Some of the bloodstains on the tank top appeared to be made where the shirt was folded up at the bottom and wrinkled. We also noticed that the yellowish stains on the shirt and tank top corresponded, but not when corresponding bloodstains on the upper portion of these garments were lined up. As forensic scientists, we were not comfortable with this missing element and wanted to have a rational explanation for the lack of corresponding bloodstain on the tank top. We went back to the items themselves to verify the diagrams and to reconstruct the position of the tank top.

To establish the positions of the stains on the tank top, we used an overlay method. This involved tracing the outline of the yellowish stains and some reference points onto a transparency and then making another tracing of the corresponding stains on the white shirt. The urine stains that spread onto the shirts were probably the last deposits. By comparing the relative positions of the yellowish areas and bloodstains near the shoulder and neck, we established that the white shirt had ridden up between deposits of the upper bloodstains and the yellowish stains. Using the transparencies and recreating the folds on the tank top, it could be seen quite easily that the tank top had been above the height of the bloodstain when it was deposited on the other garments. The tank top would not have been in contact with the white shirt in the area of staining that is part of the corresponding series.

We concluded that either the pants were open at the time of the blood deposit, or that someone reached under the shirt flap into the undershorts with bloody hands or a bloodstained object, and grabbed the undershorts, producing a fold. The white shirt and pants pocket would have been included in the fold. We were also able to conclude that the tank top was rolled up above this height when the stain was deposited.

We examined the victim's clothing for any semen deposits, but testing by Emerald City Forensics was not able to corroborate the presence of semen. The defendant was known to be a compulsive masturbator, and we found a thick deposit of pinkish cream throughout the fly area of the long johns, with transfer of this material to his bluejeans. We do not know if there was no semen present, or if the thick cream masked its presence.

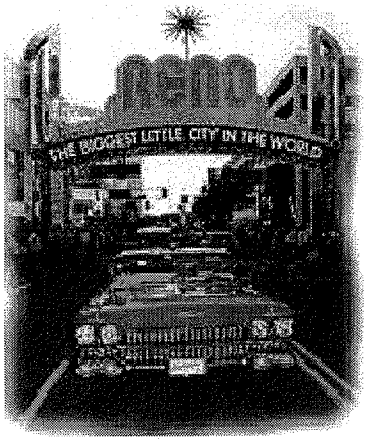
We also examined the crime scene photographs and evidence from the scene. These examinations were focused on the murder itself rather than any sexual activity that may have preceded it, and are not the subject of this article.

Summary: *Pattern analysis, assisted by microscopic observations and a simple tracing overlay method, was used to interpret an aggregate of bloodstains on the clothing of a homicide victim. The interpretation was effective in eliminating several hypotheses of how the bloodstains came to be deposited, and lent some support to the defendant's account of sexual activity. Had there also been evidence of sexual contact on the defendant's clothing, we would have been able to reach a strong conclusion. Without this, we were still able to introduce an alternative hypothesis.*

UPCOMING MEETING

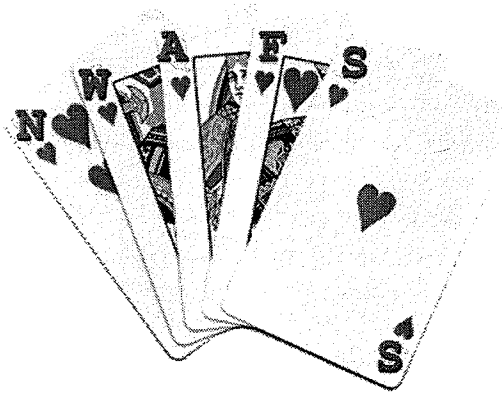
NWAFS & CAC Joint Meeting
April 7-11, 2003 * Reno, NV

ANTE UP FOR HIGH STAKES FORENSICS!

NWAFS  CAC

Workshops will be held April 7 - 8.
Paper presentations/business meetings will be held April 9 – 11.

Scheduled workshops:
DNA Auditors Workshop (2 days)
DNA Workshop (1 day)
Colt 1911 Armorer's Workshop (1 day)
Forensic Approaches to Mass Disasters (1 day)



Projected Workshops:
Trajectory Workshop
FTIR Interpretation Workshop
GC/MS Troubleshooting Workshop

The conference will be held at the El Dorado Hotel and Casino in downtown Reno. Room rates are $60/night single or double occupancy + 13.5% tax. The hotel offers free parking and complimentary shuttle service to and from the airport every half hour. Reservations can be made by calling 1-800-648-5966 and referencing CAC/NWAFS to receive this rate.

Sponsored by the Washoe County Sheriff's Office - Forensic Science Division

For more information contact:
Suzanne Harmon at 775-328-2811 or sharmon@mail.co.washoe.nv.us

Report on Fire Scene Workshop

Fun with Fire Scenes
*CAC Fall 2002 Seminar * October 14-15, 2002*

Josh Spatola, Central Valley Crime Lab
California Department of Justice

The CAC sponsored a fire workshop with Dr. John DeHaan, currently of Fire-Ex Forensics, Inc., at a fire department training facility in Huntington Beach, California. The first of this two-day workshop was lecture material related to fire scene investigation including: basic fire chemistry, fire spread, common fire patterns, scene documentation, appropriate sampling techniques, and a discussion of the crime laboratory's role in fire investigation.

The workshop lecture was extremely valuable. The discussion of fuel loads based on types of materials used in furnishing homes was particularly interesting. It was mentioned that current manufacturing trends lean toward the synthetic materials (e.g. urethanes, polyesters, nylons, etc.). The synthetics have a dual nature that tends to dislike smoldering fires but readily burn upon addition of an open flame. While natural fibers (e.g. cotton, wool, linen, etc.) tend to char and smolder and therefore resist ignition by open flame contact.

The emphasis of the workshop was determining what exactly "flash over" is as well as post-flashover fire investigation. This also included the importance of radiant heat transfer and its role in causing flashover. (Side note: In this instance, *flashover* refers to "the stage of fire development where the fire is no longer growing from item-to-item by direct flame contact but where everything in the room is on fire and is burning as quickly as air is made available to it" and not simply the ignition of the hot gas layer, which is more appropriately termed "rollover" or "flame over.")

The workshop also discussed the role of the crime laboratory in fire investigation. It was mentioned that the laboratory is not performing to its full capacity if it merely attempts a simple detection of ignitable liquids in submitted fire debris. The laboratory is more appropriately involved in the fire investigation process when it not only attempts to detect the presence of ignitable liquids, but also when it performs a material analysis to help determine the types of fuel present in the furnishings as well. This would help determine if the type of fire investigated corresponds appropriately with the potential fuel load at a particular scene. This is especially important in post-flashover investigation since "flashover can be induced with or without flammable liquids, with the same high temperatures in both cases..."

The second day was dedicated to staging and burning four mock fire scenes. The four scenes were cubicles constructed out of wood and dry wall, with carpet covered floors, and included various items of furniture depending on the room. The rooms consisted of a den, an office, and two bedrooms. Two of the rooms (the den and office) had an accelerant added to the room. One bedroom contained a newly butchered pig that was staged to represent a homicide victim, although the fire was unaccelerated.

The accelerated fires reached flashover quickly (two and four minutes). The first unaccelerated fire reached flashover just under five minutes, but was started with a flare. The last unaccelerated fire used a smoldering cigarette on a cotton blanket, which was on a urethane foam bed. This fire reached flashover just past the twenty-minute mark. Teams had been assigned to document each of the scenes before and after the burn.

All in all, I found this workshop to be extremely helpful. I was able to actually see accelerated, unaccelerated, and smoldering fires from ignition to suppression. In my opinion, observing the fire scene pre-burn and comparing it post-burn is an invaluable fire investigation training tool and I learned a great deal from doing so.

Reference: DeHaan, J. Fun With Fire Scenes, Workshop booklet, CAC Seminar, 2002.

Figure 1
An example of fire at flashover.

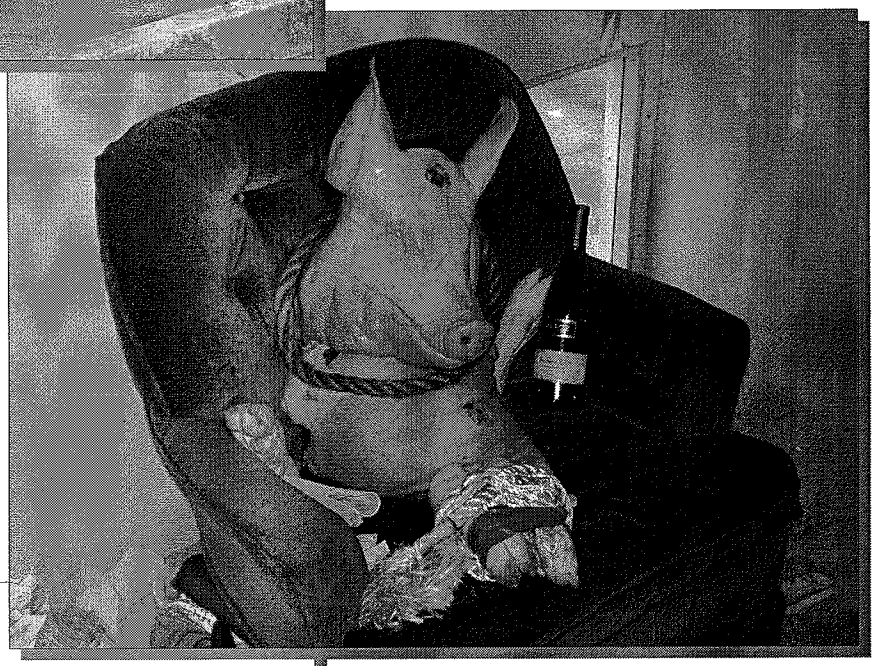


Figure 2
A staged homicide with Miss Piggy.

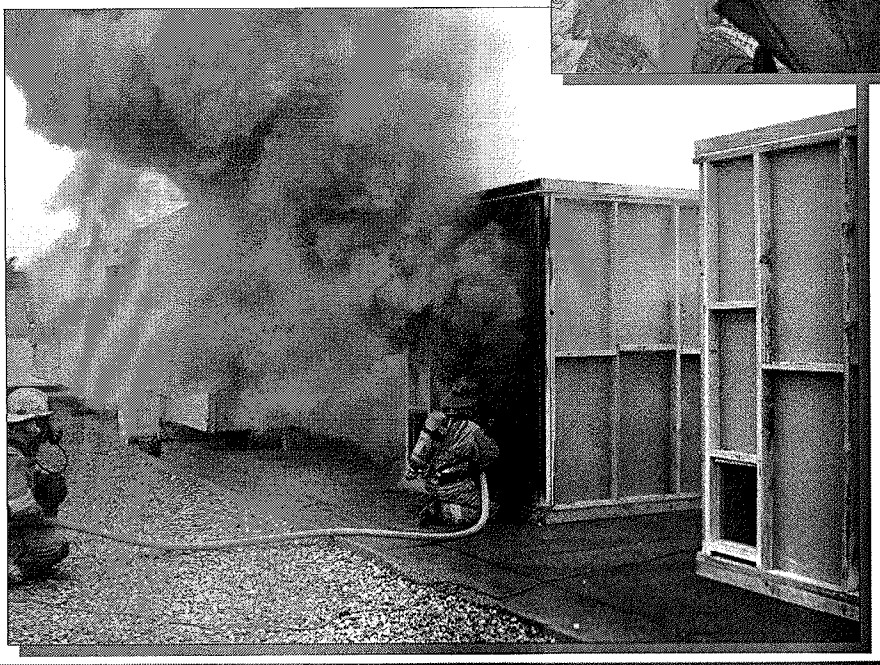


Figure 3
Fire suppression by the Huntington Beach Fire Department.

Fall 2002 Conference ABSTRACTS

October 7-11, 2002 * Coeur d' Alene, Idaho

A Simple Tracing Method for Comparing Prints and Stains

Chesterine Cwiklik - Cwiklik & Associates
Lynn D. McIntyre - Washington State Patrol Crime Lab

There is often more information in a shoeprint, tire track or other print than is obvious upon initial examination. A print that appears to exhibit only class characteristics may be rich in detail that is difficult to decipher. Using transparent overlays of exemplars to perform comparisons may not help much in elucidating subtle detail in the evidence print. We have been using a simple tracing method in working with difficult prints. The manual tracing method complements the use of transparent overlays of exemplars, and corrects for potential errors that may arise form the use of overlays alone. This method is especially useful for prints deposited in mud or blood, and prints on patterned surfaces. It has also proved useful in comparing evidence prints having design elements falling completely within the exemplar and that may otherwise be overwhelmed by it. Lastly, we have applied this in comparing stains.

The method involves manually tracing each individual mark in the area of the evidence print – even those marks that do not appear to be a part of the print – onto a piece of clear plastic. The tracing is then overlaid onto exemplars during comparison. Instead of "connecting the dots," the examiner records the "dots" themselves, because this is the actual data. Several reference points should also be traces, perhaps in a different color. Usual reference points include a scale or recognizable objects in a photograph, the corners of a photograph or lift, a seam or edge of a fabric item, and so on.

In this talk, we will present several examples of manual tracings of prints and partial prints. We will also demonstrate the use of tracings in comparisons, and the records of the comparison by use of photocopies.

Interpreting a Group of Bloodstains Assisted by a Simple Overlay Tracing Method

Linda McGarvey - Cwiklik & Associates
Chesterine Cwiklik - Cwiklik & Associates

This talk will illustrate the use of a simple tracing overlay method used to assist in interpreting a small group of bloodstains present on clothing evidence. The case in question involved a very bloody scene in which the victim was bludgeoned to death with a variety of objects. The identity of the assailant was not in question, rather his intent. The prosecution theory was that there was a protracted and brutal beating, which was intentional and pre-meditated, whereas the defense theory was that the victim initiated a homosexual encounter and that the murder was committed in the "heat of passion". In trying to determine what really happened, we examined a number of items including the victim's clothing.

An aggregate of bloodstains on the front hip area of the victim's clothing, including a stain on the pains pocket and corresponding stains on the white shirt and undershorts were of particular interest. It was important to learn as much as we could about how they were deposited and by whom because of the question of sexual activity.

We considered several possibilities that might explain how the stains were deposited: 1.) someone at the medical examiner's office had deposited the blood while handling the body, 2.) the defendant or victim had reached into the pants through the pocket, 3.) the defendant or the victim had reached beneath the pants, 4.) blood from the carpet had been transferred onto the clothing and 5.) the pants were open and then zipped and buttoned before the blows that produced the spatter occurred. We were able to rule out all but two hypotheses, that the pants were open at some point, or that someone had reached beneath the pants.

In this talk we will discuss the specific observations which allowed us to exclude some hypotheses and include some others. The overlay tracing method we used to assist in the interpretations will be described.

Validation of the Promega PowerPlex 16 STR Multiplex System on the ABI PRISM 310 Genetic Analyzer

Megan Ashton, Lori Hutchinson, Michelle Griffin, Stacey Brown - Montana Division of Forensic Science

The Promega PowerPlex 16 STR amplification system allows for simultaneous amplification of all 13 CODIS loci in addition to the amelogenin, Penta D and Penta E loci. Since only one amplification is necessary, this greatly expedites the processing of convicted offender and unsolved case samples to be submitted to CODIS.

In order to ensure the accuracy and precision of the system for convicted offender and casework samples, we performed an internal validation for the PowerPlex 16 system using the ABI PRISM 310 Genetic Analyzer. Several issues were addressed in the validation, including the detection of the minor profile in a mixture, sensitivity and

stochastic effects in diluted samples, reproducibility of samples previously typed by the PowerPlex 1.1 system or the Profiler/Cofiler systems, heterozygote peak height rations, and stutter levels at each locus. We found the system to be highly sensitive, giving results at some loci using only 0.06ng of template DNA, with some complete profiles obtained at 0.25ng of template DNA. Our presentation will focus on these and other results obtained from the validation of this system.

The Light Dawns

Dave Laycock - Idaho State Patrol, Forensic Services

A passenger vehicle collided with a 38,000 pound John Deere loader in broad daylight on a rural highway. The loader driver stated that the turn signals were on, signaling a left turn when the car hit the left rear wheel. The left signal lamps were submitted for examination; at first glance the left rear lamp appeared to exhibit cold fracture, but closer examination revealed a somewhat different story.

National Law Enforcement and Corrections Technology Center (NLECTC)

Mike Epstein - NLECTC

The National Law Enforcement and Corrections Technology Center – Western Region (NLECTC-West) is part of a system of regional centers funded by the Department of Justice, National Institute of Justice to provide technical assistance to Public Safety Agencies at no cost. The NLECTC-West has provided Audio, Video, Computer and Metallurgical forensic services to agencies in Arizona, California, Hawaii, Idaho, Nevada, Oregon, Utah and Washington since 1995. Mike Epstein is the Manager of Forensic Services for the NLECTC-West. His presentation will include a description of the services available and some examples of past services provided.

VENDORS

CRAIC Technologies
Scientific microspectrophotometers.
http://www.microspectra.com/

UTAK Laboratories
UTAK Laboratories provides a wide range of toxicology controls for use in Therapeutic Drug Monitoring, Clinical, Forensic, and Industrial Toxicology.
http://www.utaklabs.com/

ThermoNicolet Corporation
ThermoNicolet designs, manufactures, sells and services a complete line of spectroscopy products.
http://www.nicolet.com/

Agilent Technologies
Agilent Technologies offer scientists the range of instruments, systems and services needed for success in acquiring and interpreting genetic and chemical information - from sample handling, to analysis to data management and reporting.
http://www.agilent.com/

Ora-Sure Technologies
OraSure Technologies is a medical diagnostics company with a focus on point-of-care testing with products that use oral fluid samples and return accurate results in a matter of minutes.
http://www.stctech.com/

United Chemical Technologies
United Chemical Technologies is a manufacturer of organosilane chemicals and is involved with silica based solid phase extraction technology.
http://www.unitedchem.com/

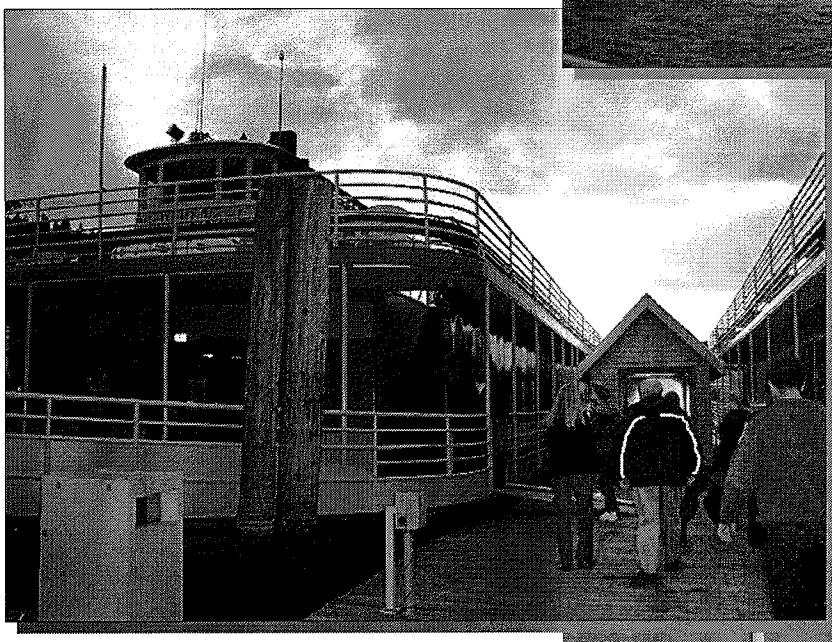
Perkin Elmer
PerkinElmer Instruments provides analytical instrumentation and creates application-specific solutions for the pharmaceutical, food and beverage, environmental, chemical, and semiconductor markets.
http://instruments.perkinelmer.com/

ABACUS Diagnostics, Inc.
ABACUS Diagnostics provides a "OneStep ABAcard p30 Test for the Forensic Identification of Semen."
(877) 225-9900

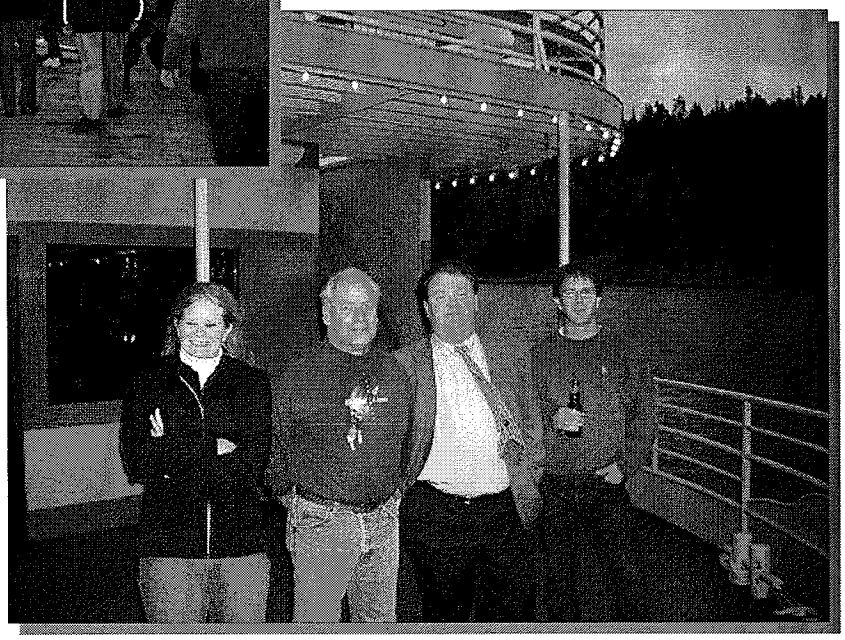
Fall 2002 Conference IMAGES

October 7-11, 2002 * Coeur d' Alene, Idaho

Wish you were here!
The view at the beautiful Coeur d' Alene Resort in Idaho.



All Aboard!
The S.S. NWAFS sets sail for a three hour tour.
A three hour tour.

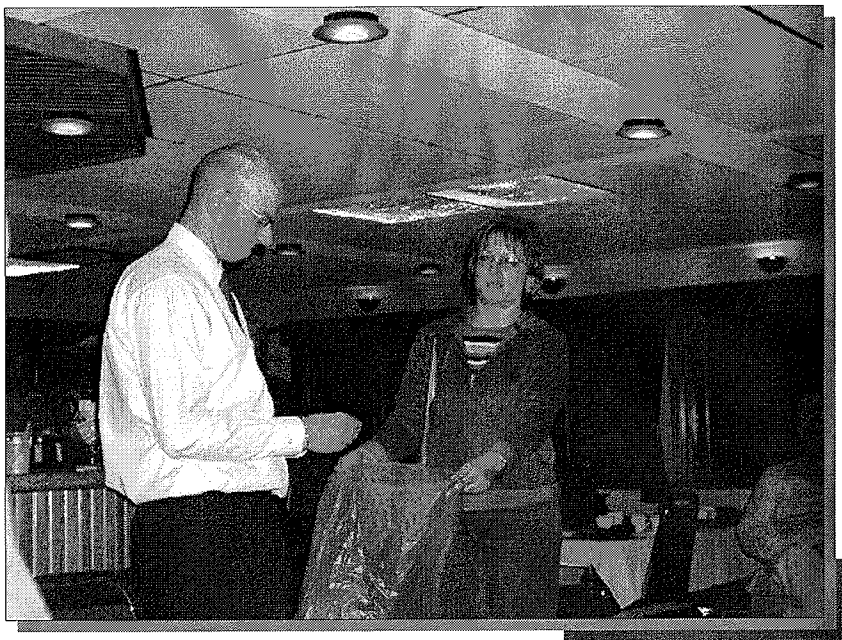


NWAFS Members enjoying the view and the company.

IMAGES

Fall 2002 Conference

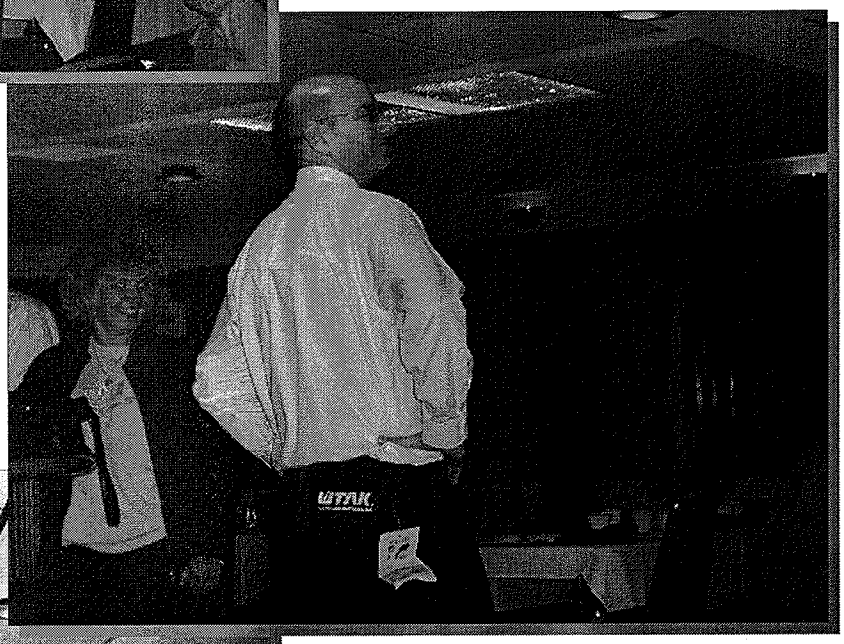
October 7-11, 2002 * Coeur d' Alene, Idaho

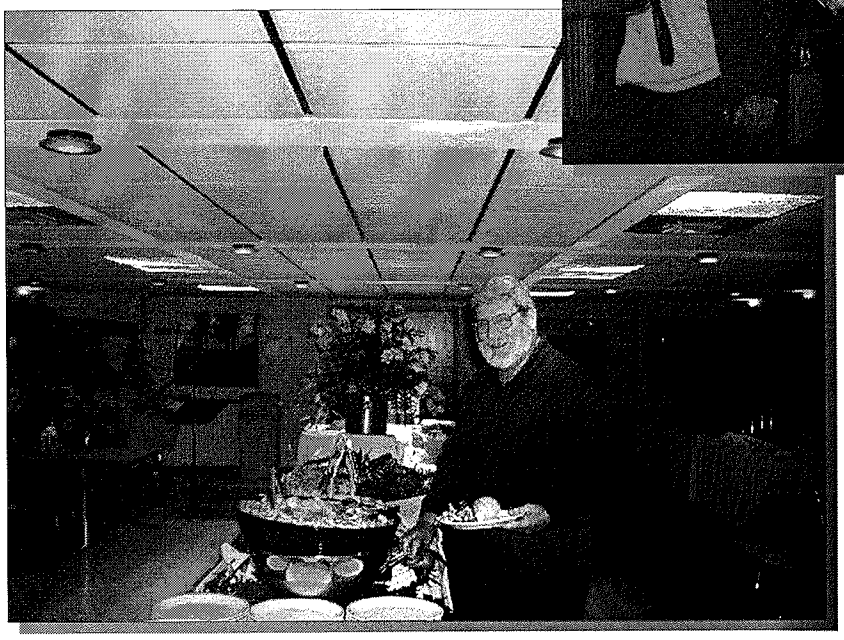


Anxiously awaiting the raffle drawing. Who will take home the coveted Grand Prize?

Modeling the Grand Prize:

A UTAK Laboratories Fanny Pack!





Although nothing beats a buffet. Seriously. Nothing.

Fall 2002 Conference MEETING **MINUTES**

NWAFS BOARD MEETING * October 10, 2002 * Coeur d' Alene, Idaho

Called to order by President Jay Henry

Members Present: Jay Henry, Tom Barnes, Bill Marshall, Julie Doerr, Matt Noedel

Discussion about changing the definition of what constitutes a quorum. Currently we need 7% of the regular membership. We have been barely meeting this (on average) over the last few years. After discussion, no change was offered at this time - will evaluate the results of the meeting data before making a constitutional change.

Assignments were made in order to gather data about our past meetings. From this, the following was assigned to be gathered by the Reno meeting:

Don Wyckoff: Provide/Analyze a business plan for NWAFS based on the ASCLD plan.
Matt Noedel: Summarize data about where, when, cost, attendance and workshop topics of prior meetings.
Jay Henry: Summarize the vendors that have supported NWAFS in the past.
Julie Doerr: Gather a schedule of other association meeting times/locations.
Bill Marshall: Provide an archive of newsletters to help track the meeting history.
Tom Barnes: Generate and implement survey questions that may help understand factors in deciding meeting attendance.

Jay Henry will audit the books (as provided by R. Banks).

Jay Henry will continue to liaison with Suzanne Harmon (Reno meeting co-ordinator) to assure NWAFS is represented.

A firearms workshop promoted by Noedel was given the go ahead for Reno. This one day workshop will cost the association the price of transporting/housing Rob Caunt-Vancouver BC police for two nights in Reno. Expected to break even with class size of 8 or more.

Jay Henry provided current board members with a final revised draft of the Ethics committee document originated by R. Thompson back in 1998. Jay's legal advisor has offered minor changes and believes the document to be sound. May be ready for adoption by Reno 2003.

A quorum was determined to have been present by Membership Secretary Julie Doerr.

Adoption of the last business/board meeting minutes

Motion to accept as printed in the newsletter: Doerr/Marshall

Motion Carries - meeting minutes accepted

TREASURER REPORT
(Barnes reporting for Banks)

IRS waived all late fees and we are currently paid up with any back tax issues.

Association purchased Adobe Acrobat for web publish assistance.

R. Banks is seeking a new accountant—less expensive for our needs.

R. Banks is formalizing a job description for the office of treasurer.

Financial position is good with a total value of ~$33,000.

TECHNICAL SECRETARY REPORT
(Barnes reporting for Putnam)

New web site located at www.nwafs.org.

Many thanks to L. Caughlin for the format and core information she provided voluntarily .

Jeff Borngasser is the web master; can access him via e-mail.

Send past meeting info (abstracts etc.) in an electronic form to him after your meeting.

No outstanding presentation nominations received for the past meetings.

Working of a standardized call for papers to help format abstracts for the web site.

MEMBERSHIP SECRETARY REPORT
(Julie Doerr)

2 new associate and 11 regular members accepted.

ASSOCIATE:

Michael Frost, Weber State University., Layton, UT
Bruce R. Thomas, American River College, McClellan, CA

REGULAR:

Jeffrey W. Borngasser, OSP, Springfield, OR
Jennifer Bray, OSP, Springfield, OR
Lisa A. Carrabba, Washington State Patrol, Seattle, WA
Sara Day, California DOJ, Redding, CA
Mike Hepworth, Utah DPS, Salt Lake City, UT
Marcela Moenne-Loccoz, OSP, Portland, OR
David S. Murdock, Utah DPS, West Valley City, UT
Linda Otterstatter, WY State Crime Lab, Cheyenne, WY
Casey Roberts, OSP, Springfield, OR
William A. Stubbs, WSP, Seattle, WA
Julianna Taylor, Utah DPS, Ogden, UT

No new life member nominations

One resignation. Ken Fujii of CoCo County. He is retiring.

Need for meeting rosters to be supplied to Membership Secretary so current status can be tracked.

Must attend one regular meeting or workshop for regular member status promotion.

ELECTION OF NEW OFFICERS

President: Tom Barnes
Vice President: Bill Marshall
Member at large: Stuart Jacobson

Each of the above three were unanimously accepted and will serve their positions.

Membership Secretary:

Nominations 1—Dan Allesio
2—Kenton Wong

A brief discussion was offered about each candidate and a vote held. Dan Allesio was elected by a majority vote of the membership present. Dan Allisio will serve as the new Membership Secretary.

Editorial Secretary:

Nominations 1—John Dyer
2—Josh Spatola

A brief discussion was offered about each candidate. Both candidates are Provisional Regular members and must be promoted to Regular member prior to holding a position on the Board. A motion to promote each candidate was put forth but after some discussion this was rejected. It was decided to go forward with the vote, select an "Editorial Secretary--elect", and retain Noedel as the "official" editorial secretary until such time as the elected candidate meets the Full Regular status. Under these provisions, Josh Spatola was elected by a majority vote of the membership present. Josh Spatola will serve as the Editorial Secretary "elect" until such time as he has met the minimum qualifications for full regular member.

NOTE - Constitution States:

(5) A Provisional Regular member shall be eligible for elevation to Regular member after a minimum period of one (1) year combined with sufficient participation in Association activities including, but not limited to:

a) paid attendance at a regular meeting;
b) contribution of technical information to the As sociation Newsletter; or
c) participation on an active Association commit tee.

No Old Business Pending

NEW BUSINESS

Spring Meeting is a joint meeting with CAC to be held in Reno Nevada. Likely time is the week of April 7, 2003 at the El Dorado hotel. Traditional format with workshops then papers.

Fall 2003 in downtown Portland, OR week of Oct 13. Room rates well within government per diem. Plan on a traditional meeting format with multi discipline workshops/papers including a speaker from the front lines of the World Trade Center disaster.

Spring 2004—Missoula, MT—Is in the early planning stages—time and place to be announced.

Fall 2004—Rumor of Ashland, OR as a possible host. Have expressed some interest but not confirmed or denied as hosting this meeting.

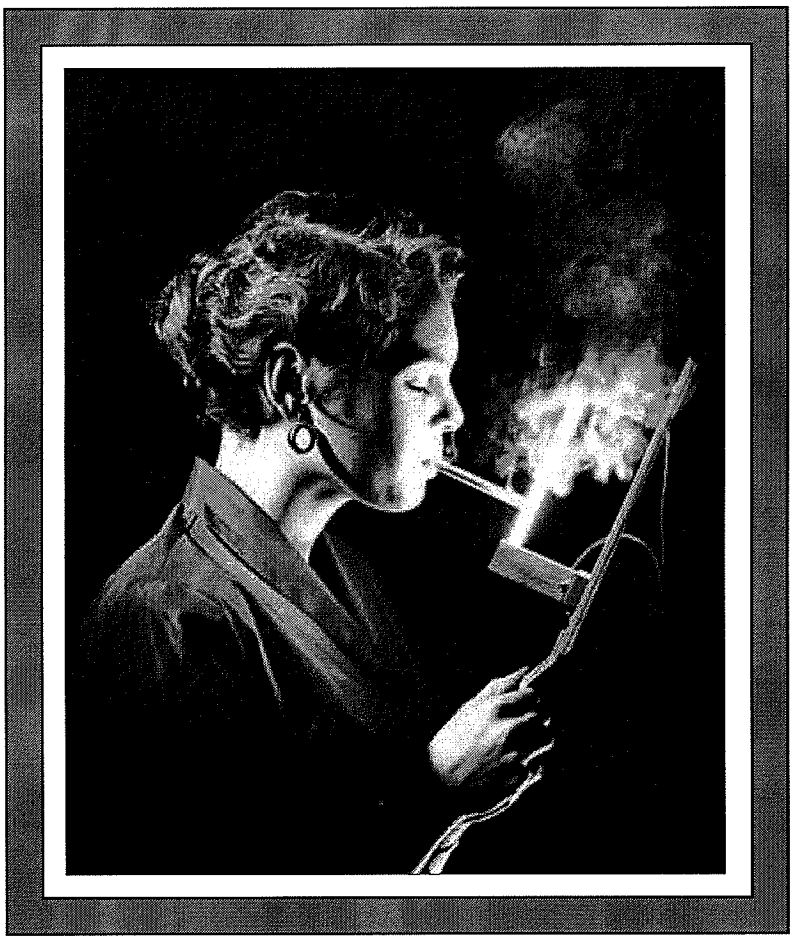
Don Wykoff brought up the consideration of the 1 meeting per year issue due in part to the poor turn out at Coeur d' Alene. Further, there is lots of competition for Fall Forensic meetings (CAC, Promega, IABPA, ACSR etc).

Cwiklick suggested that we gather data and identify the specific issues that impact our meetings—is is place, budget, cost, timing etc. An agreement to set up a committee within the Board of Directors to investigate the specifics of our meeting attendance was offered. A summary of the findings of this committee will be delivered by the next meeting (Reno, 2003).

MOTION TO ADJOURN

Noedel/Marshall

CAPTION**THIS!** CURRENT



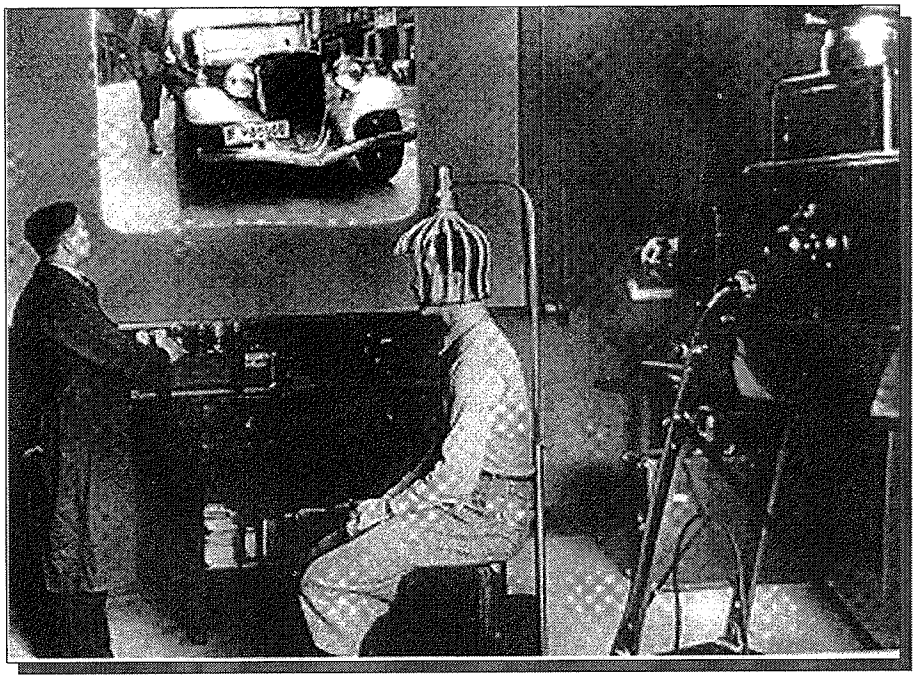
Ladies and gentleman, welcome to the always popular "Caption This!" where you have the power to deliver a witty slogan, subtitle, or description.

The best caption submitted for the photo presented above will win a pound of STARBUCK'S Coffee.

Decision of the editor is final. Bribery may not be tolerated.

Email: Josh.Spatola@doj.ca.gov

WINNER CAPTIONTHIS!



We have a winner!

Aaron Brudenell of the Washingtonn State Patrol says:

Powerpoint projector...$1200
Polygraph with serial port interface...$900
Motorcycle helmet converted to a Faraday cage...$650

Viewing your past life as a used car salesman in Europe during the 1930's...Priceless!

Congrats! Your STARBUCK'S coffee is on its way!

Honorable Mentions:

Stuart Jacobson, Idaho State Patrol:
"After years of careful research, Professor Hanson had reached a startling conclusion. Reading people's minds was boring."

Josh Spatola, California Department of Justice:
"Dr. Maximillian Canary demonstrates the newest ASCLD/LAB mandated monthly method for proper Criminalist Calibration."

BETTER LUCK NEXT TIME.

UPCOMING MEETING

NWAFS Fall 2003
October 13 -17, 2003 * Portland, Oregon

Our committee is already hard at work arranging workshops, vendors, and an all around good time for our members. Please join us and make this meeting a success. Watch your mail and check our new website at *http://www.nwafs.org/* for the latest information as the meeting plans progress.

Dates: October 13-17, 2003

Location: Embassy Suites Downtown
Portland, Oregon
Reservations: 503-279-9000

The Embassy Suites is a beautifully refurbished historic hotel in the heart of downtown Portland. It's almost too classy for us. For a preview, visit the website at *http://embassysuites.citysearch.com/*

A limited number of small suites each night are available at the govern ment per diem rate of $91/night double occupancy. The remaining larger suites are available at the special conference rate of $109/night double occupancy. Each room has a small kitchen and dining area. The room rate includes a full made to order breakfast and a manager's reception with free appetizers and drinks from 5-7p.m. nightly (A warm-up for the hos pitality suite?) The larger suites are ideal for those who wish to share rooms.

Anticipated Workshops:
Crime Scene Perspectives from NYC Crime Scene Unit
Wound Identification in Assaults and Homicides
GC/MS Spectral Interpretation
Chemstation Macro Programming
Drug Lab Recognition
FEI SEM Workshop at Manufacturing Site
Sexual Assault Examination and Kit Collection for Nurses
Digital Imaging or Video Processing
DAB Audit Course (minimum of 20 registrants required)

Questions Or ideas:
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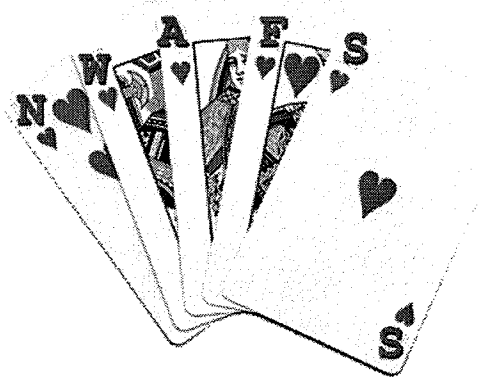
DON'T FORGET

the northwest association of forensic scientists

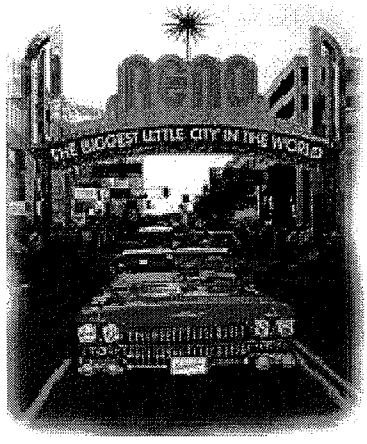
AND

the california association of criminalists

JOINT SPRING MEETING
APRIL 7-11, 2003
RENO, NEVADA



NWAFS CAC



Located at the El Dorado Hotel and Casino. **Reserve your room now**. 1-800-648-5966.

See Page 15 for more information or contact:
Suzanne Harmon at 775-328-2811 or sharmon@mail.co.washoe.nv.us
Sponsored by the Washoe County Sheriff's Office
Forensic Science Division