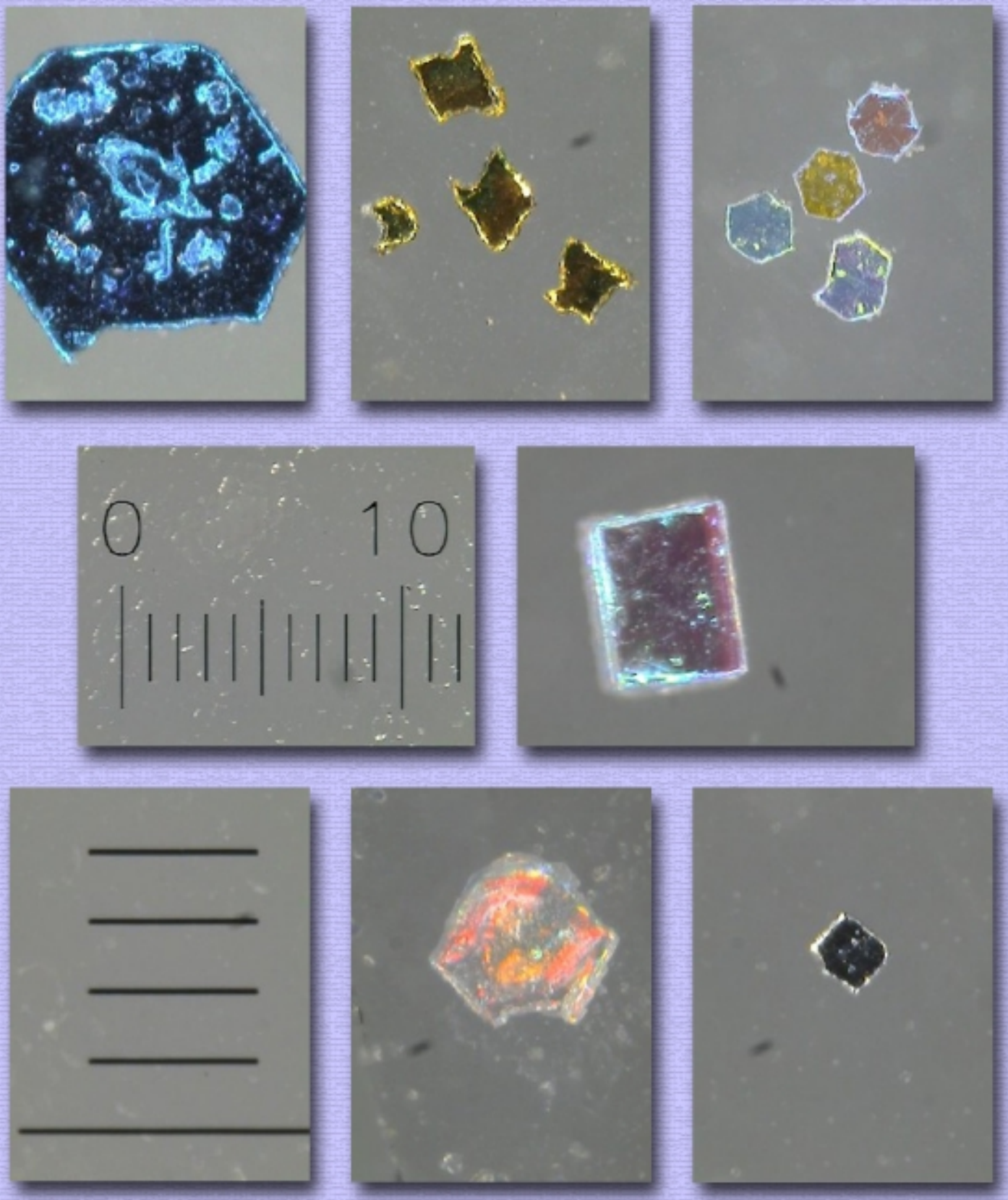
The CAC News

News of the California Association of Criminalists • 2nd Quarter 2003



The President's Desk

Basking in the Glow

I'm still basking in the glow of our 100th CAC meeting recently held in Huntington Beach, California. It was a privilege to be the President of the CAC for this memorable event. Dan Anderson pulled off a miracle and I want to publicly thank him and his staff, Tiffany Kuwahara, Michelle Sandberg, Kristina Fritz, Jaime Lintemoot, Debra Kowal, Eric Waaoske, Henry Tuazon, and Eulen Fu along with the support of the LA County Coroner's Office, LA Police Department Scientific Investigation Division and the LA County Sheriff's Scientific Services Bureau. Our seminar hosts conducted an outstanding and thoroughly enjoyable seminar. The variety of the workshops and the depth and breadth of the presentations were impressive.

We heard from some of our association's founding fathers, Lowell Bradford, Jack Cadman and Jim Brackett when they decided 50 years ago that it might be a good idea to get together and share information. I was grateful for the opportunity to hear from them and for them to see that their good intentions built a remarkable organization that is thriving with over 700 members.

It's not often we get to hear the personal story of a detective investigating a series of unsolved murders. Sergeant Gil Carrillo of the LA County Sheriff's Department delivered a fascinating account of his pursuit of Richard Ramirez, known as The Night Stalker. He took about two hours and took us behind the scene and gave us a look into his world. During his presentation, he informed us that he was expecting an important call from his partner regarding the verdict in a particularly gruesome homicide case. Suddenly his cell phone rang and we all held our breaths. After a few seconds he said, "Mom, I'm right in the middle of a talk, can I call you back?" He later received the call he was anticipating. He pumped his fist and shouted his satisfaction at the verdict. It was very dramatic and it added a sense of urgency to his presentation. Sergeant Carrillo's message of dogged persistence to his work shined through his presentation.

I was most impressed with Jon Babicka's presentation on Reed McLaughlin's career and life. His presentation highlighted many of Reed's accomplishments as a sergeant with the Los Angeles Police Department. As you know, Reed and his wife Virginia are our benefactors by their generosity to the CAC's endowment fund. It has allowed our organization to do some outstanding things. It has funded training, research projects, and has helped with funding additional CCI classes. Thanks Jon, nicely done.

Jerry Chisum gave a wonderful talk about the staged crime scene and received the Al Biasotti Award for the best paper. What I really appreciated about Jerry's presentation is that he incorporated something he learned from a previous speaker. I found that remarkable and insightful. We should all pay that close attention especially when we have to give a paper. For those who remained Saturday morning, we were treated to some interesting papers, one of which took me by complete surprise, discussed cosmetic glitter particles, which might be transferred from the victim to an assailant during an assault. I also enjoyed Robert Blackledge's presentation because Bob doesn't just give the facts. He likes to tell the story behind his work which makes it that much more enjoyable to listen to him.

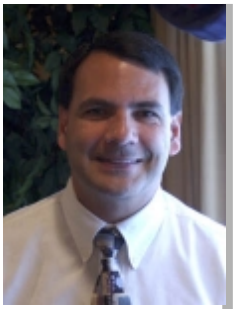
I also enjoyed the location of our meeting. The hotel was a superb choice and the food and service were excellent. I have never had a morning business meeting followed by an outdoor all-you-can-eat breakfast—another fantastic idea by our seminar committee. When we recently held our board of directors meeting at the San Bernardino County crime lab on January 22nd , I saw that most of the members had those special black CAC tote bags that were handed out to the registrants. I even thought the pen with the blue light was a nice touch.

There were so many more things that made this seminar so memorable and I wished I could list them all. I am very proud to be a part of an organization that treats its members so well. Every seminar I attend, I see my fellow associates working hard behind the scenes to put on the best seminar possible for their colleagues. The quality of the papers, the variety of the workshops, the binders, and the opportunities to share information, provide us all with the tools necessary to do our jobs to the best of our ability. I believe our association's founding fathers could only dream about such a possibility. I want to thank members and guests who attended the 50th anniversary of the California Association of Criminalists meeting for making the dream possible.

Again, my sincere thanks to Dan and everyone who was involved in making the 100th meeting of the California Association of Criminalists a most memorable event. I'm looking forward to seeing you in Reno and San Diego.

Michael

I WANT TO THANK MEMBERS AND GUESTS WHO ATTENDED THE 50TH ANNIVERSARY OF THE CAC MEETING FOR MAKING THE DREAM POSSIBLE



Michael J..Parigian
CAC President

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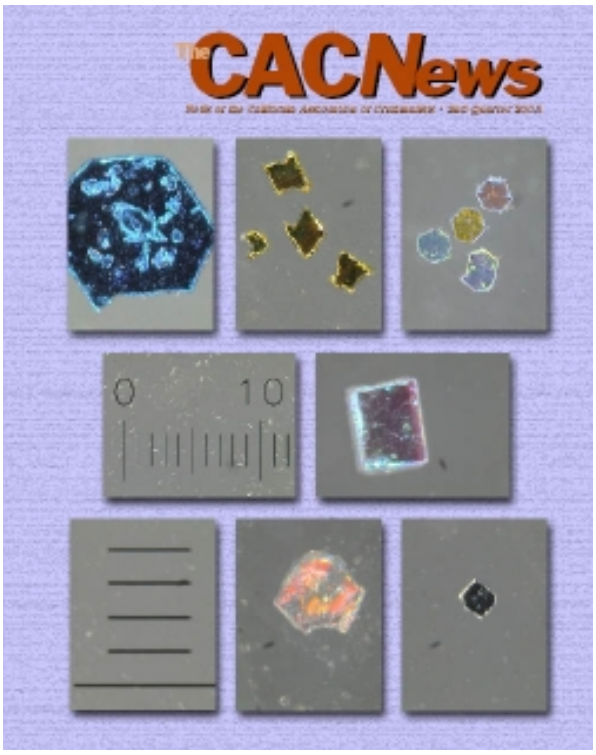
Second Quarter 2003



On the cover...
Photomicrographs of glitter from work presented at the CAC 100th Seminar by Robert Blackledge, Scott Kirkowski and Klaya Aardahl.

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CACBits • Section News

Budget Cutbacks Cause Crime Lab Layoffs in Oregon

When Oregon's Measure 28, a temporary income tax increase, failed to pass, the result cost dozens of crime lab workers their jobs. Bill Bishop, writing for the *Eugene Register-Guard* said that state crime labs in Oregon was forced to layoff some 85 "scientists, evidence technicians and support staff." It was not clear how many of those laid off were criminalists of over one year's experience. Particularly hard hit was the state's DNA lab in Portland, where the staffing went from 11 to 4, eliminating the lab's ability to enter DNA data from convicts into the national database.

Workshop on Forensic Entomology Offered

The workshop is offered through the Entomology Department at The Pennsylvania State University, and is led by Dr. K.C. Kim, Board Certified Forensic Entomologist. It runs from Weds., 21 May 2003, to Friday, 23 May 2003. This course is designed for forensic investigators working for law-enforcement agencies, including state police, municipal police, forensic pathologists, and coroners. The course has been approved by the State Board of Coroners and covers the principles of forensic entomology, the ecology of necrophagous arthropod communities, and forensic entomological analysis. For course information, contact: Dr. K.C. Kim, Pennsylvania State University, 501 ASI Building, University Park, PA 16802-3508 Phone: (814) 865-1895 E-mail: kck@psu.edu and see www.ento.psu.edu/ForensicSC/index.htm or conferences.cas.psu.edu

The DAWNing of the Age of Biometrics

The Naval Criminal Investigative Service Regional Forensic Laboratory in San Diego has recently installed a controlled access system based on biometrics.

Pictured is NCISRFL-San Diego Laboratory Director **Dawn Sorenson** before the retinal scanner in place at the lab entrance. The retinal scanner looks like a large eye. In its center is a mirror. A laboratory employee seeking access stands roughly 8" away and positioned so that they can see their eye (left or right doesn't matter since both have been programmed in). Assuming one is in the system, a feminine voice will then say, "identification is completed", and there will be a click as the lab's door is unlocked. The retinal scanner pivots up and down so that even short people (those less than 6' 6") don't have to stand on tippy toe. You wear glasses? Doesn't matter; the retinal scanner works whether you have them on or not. Power failure? Not to worry, you won't be locked in, and we can always use keys to gain access.

There is a scanner at each of the lab's two entrances, and inside the lab is a console where Dawn can either enter or delete individuals from the access system. Since a silicone cast can't defeat it, we consider this system to be superior to present biometric controlled access systems based on a fingerprint scan. We are curious, do any other forensic labs have biometric-based access systems, and if so, how do you like them?

Bob Blackledge

Richard Whalley, Long Time CAC Member

Richard G. Whalley, 60, died December 19, 2002, at Fallbrook Hospital.

Born June 13, 1942, in Seattle, Wash., he was self-employed. After attending the University of California in Berkeley, he moved to San Diego in 1966. He joined the CAC in 1967 and became a criminalist for the San Diego Police Department. In 1976 he established Richard G. Whalley & Associates Forensic Laboratory. During his 36 year career, he was personally involved in analyzing over 10,000 criminal and civil cases. He was an outdoor enthusiast.

Mr. Whalley is survived by his wife, Sonja Whalley, of Bonsall; his daughter and son-in-law Erica and Steven Ward of Escondido; a sister and brother-in-law Catherine and Walter Irey, of Anderson; grandsons Christian James, Conner and Cooper Ward; stepdaughter and her husband, Jennifer and Andy Dugas and their sons, Chase Payton and Tanner; his stepson and his wife, Adam and Millie Chase; and his stepson Aaron Chase.

Donations are suggested to the San Diego Police Foundation, (858) 973.0541. Some material for this article came from the *North County Times.*

CAC 2002 Award Winners Announced

Roger S. Greene III
Anthony Longhetti

Alfred Biasoti Most Outstanding Presentation
Spring 2002
Charlene Marie, "A Halloween Homicide"

Fall 2002
Jerry Chisum, "Detecting the Staged Crime Scene"

Paul Kirk Presidents Award
James Carroll

Distinguished Member
Charles Morton

Four travel grants of $250 each were awarded to CAC members to assist them in attending the joint meeting with the Forensic Science Society in Oxford, England. The winners were Lisa Brewer, Diane Burns, Connie Milton and Christine Pinto.

"A conclusion is the place where you got tired of thinking"

Show Your True Colors!

Decorate your lab with official CAC merchandise

T-shirts, coffee mugs, retractable badge holders! Available at any semiannual seminar and direct from the CAC. Contact Curtis Smith
curtis.smith@doj.ca.gov

Just in: CAC 14 oz. stainless steel mugs ($10), CAC Acrylsteel Mugs in Candied Apple Red and Sapphire Blue. ($12), CAC 8 oz. wine glasses ($5). Please note: Polo shirts and denim shirts will be available if ordered PRIOR to the seminar. We also have a new shipment of navy blue T-shirts "When your day ends. . . Ours begins" with chalk outline.

U P C O M I N G M E E T I N G S

Spring 2003
Washoe County Sheriff

Fall 2003
San Diego Sheriff

Spring 2004
San Mateo Sheriff

Fall 2004
Ventura Co Sheriff

Spring 2005
Oakland PD

Fall 2005
DOJ Riverside

Can't Find It?
To reduce the costs of publication, the *CACNews* may place calls for nominations and other items that were previously found in the newsletter mailing as inserts ON THE WEB. Visit www.cacnews.org to see what is offered. Content changes periodically, so visit often!

***CSI*, Eastern Europe Style**
The Cyrillic lettering on this uniform patch translates roughly to "Expert Criminalistic Service."
Submitted by Ed Jones

FEEDBACK

The *CACNews* prints letters to the editor that are of interest to its readers. We reserve the right to edit letters for brevity and clarity. All submissions to this page become the property of the *CACNews*.

Changing of the Guard

I just wanted to take a moment and thank John Simms for the work he has put in over the past two years as editorial secretary. John has a deep desire to see our newsletter evolve into the professional magazine it deserves to be. Join me in congratulating him for the editorial contributions he's made and in wishing him success in his new role as regional director.

John Houde

Straight Up!

As with most of you, when I receive the *CACNews*, I quickly flip through the pages and scan the contents for something that may catch my eye. With this last one, I took notice of the pictures of the 100th Seminar. I was particularly impressed with 10 of 23 pages, as well as the cover, being dedicated to photo clips of the 50th anniversary of the CAC. However, given more time to read and absorb the material in this publication, I came across page 6, Mr. Peter D. Barnett's article / editorial titled, *"As Good As We Could Be?"* This article was extremely disturbing to me and took unnecessary "pot shots" at the 100th Seminar Organization Committee as well as misstated some facts. So, let's set the facts straight!

The 100th Seminar was hosted by the Los Angeles County Department of Coroner (LACDOC) Forensic Science Laboratory, which has a scientific staff of less than 10. The seminar committee consisted of a group of nine, 6 from LACDOC, 2 from LAPD, and 1 from LASD. Because of the small nature of our laboratory, most of the seminar committees were a "committee of one." These individuals worked extremely hard and were dedicated to the task at hand, "Make this seminar extra special" (per the CAC Board). With this, the seminar committee took many different and positive approaches:

—The seminar was scheduled Monday-Friday, rather than Tuesday-Saturday at the exclusive Hilton Waterfront Beach Resort in Huntington Beach, CA.

—Postcards and brochures were used as mailings with information posted on the CAC website. This approach attained cost savings for postage as well as integrated current technology in the exchange of information for future meetings.

—The implementation of the $50 early bird special. This special price was designed for the criminalist to make an executive decision about attending the seminar without having to rely on his organization for permission or the funds (68 takers).

—The wine & cheese reception on Wednesday night. A live woodwind quintet played and free drinks were available during this 2-hour social event.

—A beach bash banquet was offered on Thursday night rather than the last evening of the seminar. This event was not a fancy event, but rather a very casual, "non-stuffy", fun evening. A DJ played music throughout the night, free drinks, as well as sporting events, basketball and team volleyball were available. It was very well attended, 120 people in comparison to other seminars that average 75 people for the evening.

—The grand prize was changed from free attendance to the next seminar to a prize of the seminar committee's choice. In this case, we gave away a brand new palm pilot.

—A digital camera was raffled away during the meeting to all vendor attendee participants.

—Door prizes included many scientific books from different publications.

—The last day (Friday) usually does not include a meal, however, we served a breakfast buffet to all attendees.

—Nice briefcases with the CAC logo and glow pens were given to all attendees.

In Mr. Barnett's article, he states, "the board of directors has underwritten the 100th Seminar with money to purchase fancy briefcases for the attendees, reduced registration costs to $50…" This is only the partial truth. How can I expect Mr. Barnett to know what the board is doing when he is not even on the board? The CAC board authorized the organization committee to lose $10,000 by "giving back to the members." However, with this money, they expected us to make the seminar extra special, as well as invite all the CAC charter members with spouses to this meeting, all costs subsidized. However, after the math was done, if we had invited and sponsored all of the charter members, the $10,000 would have been exhausted. Here was the dilemma. The board would not authorize any more money, therefore, did *not* want us to offer the $50 early bird special. As you can see, the special was offered and the board lashed out at me for "going against the wishes of the board." Their idea of giving back to the membership was obviously the gift of the charter members attendance. As to the briefcases, the board had absolutely no knowledge as to the freebies that were to be given out to the registrants.

The article further discusses presentations and the lack of technical substance. I don't know about the rest of you, but when I have attended past CAC seminars, the last day or the highly technical session is where everyone bails out on the speakers. I'm sorry if the 100th general session was not as technical as Mr. Peter Barnett would of liked, but the committee was looking to have speakers that would be of interest to all, not specific to any particular discipline. I have to agree that involvement amongst the large crime laboratories was at an extreme minimum. I was extremely disappointed with this as each of the labs were personally contacted and asked to present an interesting case study. Abstract forms distributed to the general membership are an absolute joke. The only way a host can get presenters is to beg, plead, borrow, or call in favors. The lack of technical substance may not be the fault of the host, rather the lack of initiative or interest to excel in the field by the current source of criminalists. On the flip side, nowhere in Mr. Barnett's article did he mention the positives: the attorney general's attendance, the historical charter members attendance, or even the wonderfully assembled historical CAC slide show set to music.

It is extremely regrettable that Mr. Peter Barnett did not view the 100th seminar as a success. To my best recollection, I don't recall Mr. Barnett submitting an abstract to present. It's obvious to me that he "did not want to take advantage of the occasion of the 100th Seminar to demonstrate a renewed and continuing commitment to the continuation of the CAC's historical strong role in the technical and professional development of criminalistics." In fact, Mr. Barnett did *not* even *attend* our seminar; rather he took advantage of the $50 early bird special and had a colleague grab his materials for him. He must have written his commentary based on the binder alone. As to the many participants of this seminar and the organization committee, I believe we did the best job possible. Ours was quite different from previous seminars, and the attendees were able to relax and have fun at this memorable 50th Anniversary, 100th Seminar of the CAC.

Dan Anderson

Experts on Experts

What is the role of the scientist in assisting an attorney with an opposing expert?

New items are on the menu and new topics on our minds. With the goal of addressing some nontechnical issues for a change, we decide to comment on a recent issue of *Silent Witness*, a quarterly publication produced by the American Prosecutors Research Institute. This particular article, entitled *Preparing for Defense Experts* (Kreeger, 2002), piqued our interest on a number of fronts. The author provides useful preparatory advice for an attorney facing a challenge to the scientific evidence in a case. However, we wondered whether a couple of the recommendations crossed some undefined line for professional behavior of the forensic scientist.

The defense has hired an expert, what do I do!?!?

The first question posed by Kreeger is,

> *What should you do when you learn that the defense announces their intent to use an expert witness to assist with the DNA evidence in your case?*

Norah points out that the author's answer,

> *Initially—do not panic! Secondly, prepare your response, bearing in mind that the DNA evidence is merely one piece of evidence in your entire case,*

contains an implicit and potentially erroneous assumption. Keith articulates the assumption, that all defense experts are out to illegitimately destroy your case, and that you can prepare a response without considering whether the expert brings reasonable issues to consider. Both of us agree that if one purpose of the prosecution is to seek the truth, it might be a good idea to at least consider legitimate criticisms of the evidence before deciding that they should be challenged.

The author further suggests that,

> *The prosecutor focuses, organizes and controls the evidence presentation to ensure that the fact finders will reach the correct result. Treat the defense DNA expert accordingly, i.e., as a witness whose testimony is controlled by preparatory research, anticipatory pretrial motion work, motions-in-limine regarding trial testimony and focused cross-examination. This newsletter reviews specific actions prosecutors can take to preclude or limit a DNA expert from controlling the content of the testimony.*

Norah wants to know, what is the "correct result?" Presumably, the prosecution has not brought a case to trial for which insufficient evidence exists; however, if the defense succeeds in showing reasonable doubt, is this necessarily an "incorrect result?" Keith observes that this assumes that the defense expert will offer nothing of value to the interpretation of the evidence. Norah agrees with the author's suggestion later in the article, that before attempting to limit or preclude a defense expert, the prosecutor might ask her own expert to review the opinion and determine if it contains any arguments of value.

What is the strength of the evidence?

Kreeger then asks the prosecutor to

> *… learn as early as you can whether there could be a credible defense attack of your DNA evidence and specifically what it could be. When your DNA analysts provide a report to you, ask if there are any foreseeable criticisms, attacks, concerns, or problems. ... Review with the analysts all of the other evidence in the case to make sure that the DNA evidence is consistent with all of the facts. ... (Experts can rely upon a wide variety of sources to form their opinions, including knowledge of the facts of your case.) Learn from your expert witness whether a defense expert's testimony would be a good faith challenge and not misleading to the fact finder.*

We both find this view at best fascinating and, at worst somewhat frightening. Does she really mean to suggest that these questions are relevant only if an opposing expert is retained? Clearly, these critical questions should be asked regardless of whether the DNA evidence is reviewed by an independent expert. Norah emphasizes that it is perhaps even more important to critically review the evidence if defense has *not* hired an expert, as is the situation in far too many cases. While defense experts can certainly be annoying and inconvenient at times, they play a crucial role in the administration of justice in an adversarial system. The current practice of forensic DNA analysis by most laboratories is proof of the high standard the discipline has been forced to attain; this is precisely because of the scrutiny DNA typing has received for more than a decade since its inception. Keith reiterates that the prosecution has an obligation to present evidence that is competent, material, and relevant, and the prosecutor should actively seek to determine if any compromise to the evidence exists, not wait for the defense to find it.

To what extent should the prosecutor limit the role of the defense expert?

The next suggestion is for the prosecutor to

> *… evaluate the facts and anticipate the defense in the case.*

So far, so good.

> *The better in command you are of all the facts and all the plausible defenses, the better positioned you are to successfully exclude or limit the defendant's expert. … If identity is NOT the defense, then what legitimate purpose (or testimony) will a DNA expert offer? If identity is not the defense, then the expert's testimony is irrelevant. Challenge the defense's ability to call an expert whose testimony will be a general criticism of science or statistics.*

Keith observes that this statement is in direct contrast to the previous statement regarding the scope of the testimony of her own expert. According to Kreeger, the prosecution expert may testify about a broad range of topics related to the case. To suggest that the defense expert should be limited to the issue of identity is disingenuous. Norah reiterates that many legitimate defense challenges to biological evidence focus not on the issue of source as established by DNA analysis, but on how it got there, in particular on the issue of transfer. Our contention is that a *forensic scientist*, whether retained by defense or prosecution, may and should comment about the totality of the biological evidence, including the relationship of the evidence to the crime event.

Kreeger then suggests that

> *…if the defense lists or announces a potential defense witness, ask on the record what purpose the expert will serve. Challenge the defense lawyer to articulate the need for and the testimony of the expert in your case because you will hold the expert to those limits. Get into your record, either by proffer in court or by pleading, a demand for a specific description of the expert's testimony.*

Keith astutely comments that no expert can be held to his lawyer's description of his future testimony. Norah further observes that judges rarely, if ever, exclude or limit the testimony of defense experts, even those who are blatantly unqualified. Right or wrong, it is the current state of the practice.

Kreeger asks the prosecutor to

> *…inquire and force an answer from the defense regarding whether the defendant wants to test the DNA evidence. For a number of post-conviction reasons a defendant's desire to retest is important, but not testing the evidence should limit or possibly exclude the defense expert's testimony at trial.*

We are not aware of any legal precedent that would render inadmissible an expert's opinion on the validity of the prosecution's testing because he himself has failed to test the evidence. In fact, in many jurisdictions, reference to retesting is specifically precluded as prejudicial unless defense chooses to offer it.

Additionally, she suggests that,

> *You should record the following by way of submitted letters and/or discovery pleadings: (1) that there are remaining samples from this case are in your lab; (2) that you are willing to allow for retesting; and (3) that an opportunity will be afforded the defense expert to retest the evidence. When the defense expert does not retest, move before trial for permission to cross-examine the expert on his awareness of the remaining sample and his opportunity to retest.*

Keith observes that, in both this and the previous statement, the author attempts to subtly shift the burden of proof from her shoulders to those of the defense. It is obligatory for the defense to question every piece of evidence proffered by the prosecution for compliance with both scientific and legal standards; the defendant is not required to offer an affirmative defense. To suggest that a defense expert's criticism is without merit simply because retesting was not performed defeats the primary aim of the defense; to make the prosecution prove *its* case beyond a reasonable doubt. Norah reiterates that legitimate challenges more often dispute the collection, documentation, or interpretation of the evidence, rather than the nominal results obtained by the laboratory analysis. Keith reminds us that fair is fair; a defense expert cannot (or at least should not) attack or imply a typing error on the part of the prosecution expert when it is *merely* possible. A specific alternative interpretation, literature reference, or sometimes retesting is required to substantiate such a claim.

Getting the scoop on the expert—how far is fair?

The author suggests that the next step is to

> *…research the expert's credentials. Get as much discovery material from the defense lawyer as you can, including the expert's fee amount and the parameters of the expert's compensation.*

Both of us roll our eyes skyward at this old, tired, and vacuous issue. An independent expert is not paid for his opinion, but for his time. Every professional in the courtroom is compensated, from the experts and attorneys to the judge and the courtroom staff. While every prosecutor feels the need to ask the question, no expert with even minimal experience will become even remotely

defensive, the only possible helpful outcome for the prosecutor.

> Next, Kreeger entreats the prosecutor to
> *…learn who the defense expert is in the forensic science community. Is this person a forensic DNA examiner, a non-forensic scientist, an academic, or a population geneticist? Has the expert worked in a lab? If so, when, where, doing what and for how long? Examine the witness's resume, biography, or curriculum vitae for what is and is not there.*

We agree that this is excellent advice, because it assists in determining the scope of the individual's expertise.

> The author's next suggestion is to
> *… compare information provided by the expert with additional information found in the cyber or real world. Conduct an identity search on any of the Internet's major search engines. Search NEXIS, LEXIS and WESTLAW for references to the expert. Opinions reciting a court's refusal to find someone to be an expert are persuasive support for a motion to exclude a witness entirely.*

Norah worries that this sort of activity verges on a witch hunt. What information is fair game for the court room and where does one draw the line between professional expertise and personal trivia used only for the purpose of embarrassing the expert? This is the information age, but how much is too much information? Keith counters that such searches can be a legitimate means to confirm the expert's claims regarding education, training, and experience.

> Kreeger suggests that the prosecutor
> *… then, call APRI or other resources that may have transcripts or unpublished opinions that refer to the defense expert. Find out if the transcripts reflect the expert's qualifications to testify in your case, given your facts and your DNA evidence. Call or contact resources to confirm the credentials and qualifications of the expert. Ask your analyst and others in your lab to use their professional resources, including neighboring labs or the FBI, to gather information about the expert.*

Norah voices the concern that now, the attorney is involving the scientist in a hunt for information about a proposed witness. This is not a straightforward or black and white issue. Certainly peers can be useful and legitimate sources of information about the professional qualifications of other experts. In fact, the attorney would be foolhardy *not* to use this resource. However it is a short street from a review of professional qualifications to rumor, hearsay, and gossip, especially if it is expressed in a public forum. Both the prosecution and defense communities maintain group e-mail lists and on-line discussion boards. Both of us have seen instances in which attorneys are simply looking for "dirt" on an expert. Keith cautions that, without commenting on how attorneys should do their job, the scientific expert should think carefully about responding to such public requests. Because electronic communication is instantaneous, far-reaching, and feels impersonal, any indiscretion is magnified exponentially. Next time you are tempted to publicly answer a call for information on another expert, consider whether you would be willing to have your comments published on the front page of the *New York Times*, or would repeat them from the podium at a professional meeting. If not, swallow your words, without choking if possible, and go do some science.

As Keith is fond of saying, we comment on the evidence, not the expert. The problem with an attack on a person is that it ignores that which is most important to us – the evidence. Our job is not to comment about someone who has analyzed some evidence; it is to comment on the actual examination and interpretation of the evidence, irrespective of the person analyzing it. Focusing on the evidence, not the analyst or expert, should occupy our thoughts and actions.

> Next, the author suggests that the prosecutor,
> *compare what the expert's testimony has been to what the defense purports to be the expert's role in your case. If the expert's credentials are inconsistent with the purported defense challenge to your evidence, move to exclude the expert.*

Both of us agree that this is a legitimate and useful challenge to the defense's use of an expert. In fact, we wish judges would take a stronger stand on excluding truly unqualified experts.

The expert is testifying whether you like it or not

In the final section, Kreeger discusses a number of issues regarding cross-examination. First, she asks the prosecutor to

> *… compare and contrast sharply the specific scientific, forensic, and non-forensic, work experience of your analyst and the defense expert. Which expert works on forensic science cases, solely, in a lab that is accredited or working towards accreditation? Which expert is in a lab every working day of the year? Who works daily with other qualified scientists available to review the expert's work? Who has examined the evidence in the case?*

Norah remarks that, again, this assumes that the defense expert has no legitimate qualifications. While some independent experts come solely from academia,

others are a part of the forensic community, and do (or have previously) performed forensic examinations on physical evidence. Keith also raises the point that comparable questions from the defense attorney about the state's expert would include queries such as: Who has a more advanced degree? Who has current knowledge about the wide scientific literature on this subject, not just the forensic journals? Who has access to a greater cross section of the scientific community, and can therefore speak with more authority about the opinion of this group? Who has performed more controlled experiments, and published more results? If the prosecuting attorney merely wants to measure the size of the expert's gonads, the defense is likely to win a major portion of the time. The infamous "battle of the experts" is just another instance of inappropriately deflecting attention from the evidence by shifting it to persons and personalities.

Then, the author wants to know,

> *…when did the defense expert learn about the case? If the defense expert has not tested the evidence, move to limit the defense questioning or exclude it entirely. When the expert has no personal knowledge regarding the analysis of your DNA evidence, request that the defense be precluded from asking any questions regarding the lab or the match. Finally, who can contextually analyze the DNA evidence with all of the other evidence in the case?*

We agree that these are interesting questions, the answers to which will probably surprise the author. In our experience, if the defense expert is a forensic scientist (with or without DNA expertise), *he* very likely has more information about the case as a whole than the prosecutor's expert. This is, in part, the result of increasing specialization and decreasing general criminalistics education in public laboratories, a subject we have beaten to death in previous columns. (Inman and Rudin, 1997, Rudin and Inman, 2002a, 2002b)

Penultimately, Kreeger suggests that,

> *while DNA evidence is not complicated, do not allow the defense expert to talk about unrelated, general scientific or statistical issues.*

We suppose this is a statement that only an attorney could make with a straight face. Leaving aside the fact that good forensic science should also be good general science, and statistical issues are hardly unrelated (although they can be unwarranted), one could fashion numerous wigs from the locks removed as DNA analysts pulled their hair during a torturous DNA mixture interpretation.

In conclusion the author states that,

> *DNA evidence is just one form of identification. It is not the determinant of guilt.*

So far, we are in agreement.

> *DNA is, however, an easily validated and trustworthy science. Similarly, statistics is not new or fuzzy math. Consequently, a defense expert cannot attack the fields of science and statistics credibly.*

While we might dispute "easily," we have no fundamental disagreement.

To be relevant, experts should challenge facts in a case.

We couldn't disagree more. Qualified (or for that matter, even unqualified) experts rarely disagree on the facts. It is alternate hypotheses, or contradictory assumptions that produce apparently conflicting interpretations of the data. Both attorneys and forensic scientists would be well served to understand how and why experts arrive at contrary conclusions. These are exactly the issues that should be aired in the courtroom and clarified for the trier of fact.

As we fork the crumbs and drink the dregs, we offer a couple of concluding thoughts. The first is that experts should talk about the evidence, not other experts. The evidence is where our expertise lies, and on that topic we should expound with gusto. Assumptions, hypotheses, and interpretations are all reasonable grounds for discussion and perhaps disagreement. Well-grounded opinions as well as vigorous challenge and review serve the interest of justice.

Second, a fine line exists between assisting the client attorney in preparing for opposing expert testimony, and in participating in an attack on another expert simply because he holds an opposing opinion. Personal, *ad hominem* attacks are unseemly and sully the entire profession, as well as the individual.

How can we have these (admittedly strong) opinions about our role in the attorney's preparation for an opposing expert? Precisely because we ourselves on occasion have been there, done that. We have also observed other experts eagerly participating in the deceptive despoiling of another's career, and have come to believe that attacking experts is not part of our professional job description. We say our *mea culpas* and vow to find some swords to fall on. Not a bad frame of mind in which to return to the real work of forensic science—doing some.

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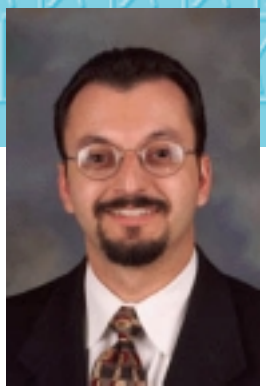
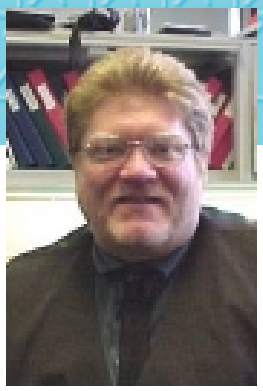
Candidates for the CAC Board of Directors



Dean M. Gialamas



John Simms

Pennie Laferty

Ron Nichols

For Treasurer
Dean M. Gialamas

Hi fellow CAC members! My name is Dean Gialamas and I am honored to be running for the board position of treasurer. I have been a CAC member since 1990 and have served the CAC in several areas ever since joining. I have served as chair and co-chair of the Training and Resources Committee for over 9 years, chair and co-chair of the CCI User's Advisory Board for over 9 years, chair of the Southern Section Serology Study Group (I know, I might be dating myself ...) for 3 years, and a member of various ad hoc committees appointed by the CAC president. My experience in sponsoring several study group meetings and training and resources courses, hosting the CAC Fall 2001 Seminar in Universal City, and my day job as an assistant director of the LA County Sheriff's Department Crime Lab have given me several opportunities to practice my fiscal responsibility. I look forward to seeing many of you at the business meeting in Reno and would be honored for your support as your treasurer.

For Regional Director South
John Simms

Hello, fellow CAC members. I have been a CAC member for several years now. I have previously served CAC as the chair of the alcohol study group. Afterwards, I started the QA study group about three or four years ago. I still chair the QA study group. I have just completed two years as the editorial secretary of the *CACNews* magazine and have enjoyed it immensely. I would like to move on to new and different challenges, though, and that is why I am seeking election to the position of southern director for CAC.

As southern director, I will serve the membership as efficiently and effectively as possible. I already have experience working with the CAC Board by serving as the editorial secretary.

I look forward to serving you as your southern regional director.

For President-Elect
Pennie Laferty

I've been a CAC member since 1990 and was membership secretary for four years (1996-2000). During my membership, I have seen some changes in our organization. The creation of the website, e-mail notification of upcoming events and moving to a lunch meeting format for the southern section meetings are positive changes. One change that is a little disheartening is that even though our membership has increased dramatically, the number of people actually participating in the organization on a regular basis has not. I don't know why this phenomenon is occurring. Perhaps our busy life-styles have put increasing demands on our free time making participation in other activities more and more difficult. As criminalists, we should make time to participate in professional organizations whether it's at the board level or as a meeting attendee. My goal as president-elect and later as president would be to increase member participation. I have a number of ideas that may accomplish that goal. Some of these ideas are: 1) increased communication with the membership to solicit solutions, 2) Contacting employer agencies for their support and 3) perhaps moving into the 21st century by implementing teleconferencing. You can help me achieve my goal by voting for me in April.

For Editorial Secretary
Ron Nichols

My name is Ron Nichols and I find myself having the honor of running for editorial secretary for the CAC Board of Directors. This will be the third time I will be pursuing a position on the BoD, the other two being northern regional director and president. If elected, I look forward to another time of service for the leading regional forensic organization in the country.

One of the primary responsibilities for which I will be given care is the *CACNews*, a publication that has grown as professionally as the organization. It is a credit not only to the organization but to the entire profession. It is my desire to continue on with the tradition of its growth and development. With increasing court scrutiny, I feel it is a good avenue through which to educate not only those within our profession but our clients as well. Further, considering California is one of the last bastions of general criminalistics, it serves as an excellent foundation around which to keep the tradition of criminalistics thriving. I look forward to a fruitful time as your editorial secretary if so elected. Thank you.

All That Glitters:
Forensic Characterization and Assessment of Evidential Value

A new popular trend has emerged with the addition of glitter to women's makeup. This kind of makeup has attracted many different ages from adults, teenagers, and even preteens, due to its flashy core. There is an abundance of these products on the market today that include hairspray, gels, lip-gloss, roll-ons, lotions, and just plain glitter. These products all contain glitter particles of different shapes, sizes, colors, and chemical compositions. The combination of these different characteristics can be analyzed, giving added potential to discriminate between any two glitter particles.

Assisted by a grant from the A. Reed and Virginia McLaughlin Endowment Committee of the California Association of Criminalists, and under the direction of Senior Chemist Robert Blackledge, the Naval Criminal Investigative Service Regional Forensic Laboratory in San Diego, California, is conducting introductory studies of the forensic significance of glitter particles. This project is designed to produce a protocol for the recovery and comparison of trace glitter particles. The first part of this study includes the development of a protocol for the detection and recovery of glitter particles from evidence items and crime scenes, and for their comparison and characterization. Glitter particles were detected using unaided vision in natural light, white light, and with an alternate light source. Recovery methods tested included individual particle picking with fine forceps, scraping clothing items over butcher paper, and various methods of tape lifting. Different particle types were characterized by microscopic examination and cataloged using an Inf-500(tm) CCD Video Microscope (Moritex Corp., Tokyo, Japan) along with VisionGauge(tm) software (VISIONx Inc., Pointe-Claire, Canada). Additionally, particles were examined with a Video Spectral Comparator (VSC I, Foster & Freeman, England), and selected particles were examined with an FTIR Microscope. The cosmetic glitter particles are mostly made from a polyethylene terphthalate (PET) film but can be found in several different colors, sizes, and shapes (hexagonal, square, rectangular), and may have surface coatings on one side. Although at this point incomplete, in addition to a protocol, this study will eventually produce, on CD, a catalog of different glitter particle types.

The second part of this study is to assess the evidential value of glitter. The transfer of glitter particles during criminal activity may range from very likely to practically nil, depending on the type of material the glitter was transferred on to, as well as the location, conditions, and abundance of the particles. Obviously the more intimate the contact, the more likely particles will be transferred. There is a high probability of transfer of these particles in sexual assaults, abductions, or in any crime where there is intimate contact between victim and assailant and/or the environments associated with them. Certainly it would seem reasonable that glitter particle cosmetic traces might help to provide an association between a suspect and the victim. However, consider the following scenario:

A sexual assault victim was wearing a glitter cosmetic product. Some glitter particles matching this product are recovered from the clothing of a suspect. The case goes to trial and the prosecution presents the evidence. Upon cross examination, the defense attorney states:

"Today, these glitter particle cosmetic products are so popular that they are virtually everywhere. My client could have picked up these glitter particles on his clothing from just about anywhere!"

Unless this assertion can be refuted with solid scientific data, the usefulness of glitter particle trace evidence in helping to establish an association between the victim and the suspect would be considerably weakened. From the assortment of different brands and types of commercial glitter cosmetic products collected and characterized, four different specific types have been selected as "target particles." By specific, it is meant specific in terms of size, shape, color, surface morphology, and chemical composition. Arrangements were then made to perform tape lifts at booths in local bars and restaurants and in the back seat of police cars when they were brought into the station at change of shift. These tape lifts were then searched microscopically to help give insight into the following two questions: 1) In general, how ubiquitous are glitter particles in the environment? 2) If one has specific target particles, how likely is it that one or more of these particles would be picked up on one's clothing?

As criminalists, we know that we can do nothing if the evidence is not collected in the first place, packaged properly, and submitted to the crime lab. Forensic nurses are most often the first to examine sexual assault victims and suspects. We are scheduled to jointly give an oral presentation/practical exercise before the International Association of Forensic Nurses (IAFN), at their meeting in Las Vegas in September, 2003. After a brief PowerPoint introduction, the three of us will instruct the audience on the collection of glitter particle traces via tape lifts (we will have several different types of glitter cosmetic products available). Arrangements have been with Olympus Microscope Corporation for audience members to then be able to examine their collected samples using the Olympus MIC-D Digital Microscope. Although forensic nurses might not usually perform this last step, we hope this exercise will be interesting and fun for them and will alert them to the potential value of glitter particle cosmetic traces as associative evidence.

(l-r) Robert Blackledge, Senior Chemist, Scott Kirkowski, Intern, and Klaya Aardahl, Intern, Naval Criminal Investigative Service Regional Forensic Laboratory, San Diego, CA

ABSTRACTS
From the
100th Semiannual Seminar
Huntington Beach

The Future of X-Ray Analysis in Forensic Science

Dennis Ward, Federal Bureau of Investigations

X-ray analysis in an extremely useful tool for elemental characterization of materials in the forensic laboratory. This tool, however, whether SEM / EDS or XRF, historically has been used simply to compare materials, and then only in a laboratory setting. The FBI has several current programs that will expand the usefulness of elemental analysis on several fronts.

It will create a reliable database of NIST traceable x-ray spectra from standard materials. This database will contain spectra uploaded from forensic laboratories, as well as from NIST and other government laboratories. It will consist of "NIST certified" spectra, manufactured materials, pure elements, compounds, and materials of specific forensic interest such as explosives and pyrotechnics. This database will be commercially available, and structured, managed and used in a fashion similar to the ICDD "Powder Diffraction File."

The FBI also intends to develop "field use" XRF, which when interfaced with this x-ray spectral database will permit "on-the-spot" identification of materials associated with more common criminal activities, as well as materials, devices, and components used in weapons of mass destruction.

Reed McLaughlin and a 1950 Murder in Los Angeles

Jon Babicka, Los Angeles Police Department — SID, 555 Ramirez Street, Space 270, Los Angeles, CA 90012

In 1950, an elderly woman was shot to death by a prowler in her Los Angeles home. Crime scene investigators recovered a partial palm print on a piece of broken glass from the kitchen door. The intruder broke the kitchen door window in order to enter the residence.

LAPD Sergeant Alfred R. 'Reed' McLaughlin was a Latent Print Specialist in 1950. He examined the partial palm print recovered at the crime scene and determined that it matched the suspect's palm print. This evidence was instrumental in leading to the conviction of the defendant.

This same Reed McLaughlin, and his wife, Virginia, left an endowment to the CAC. This endowment currently funds CAC-sponsored research and training. The endowment also funds the Edward F. Rhodes Award.

Discussion of the crime scene as well as the official 1950 LAPD photos of the crime scene will be shown. Further talk will be about Reed McLaughlin and the endowment that Reed and Virginia McLaughlin left to the CAC.

CASE REVIEW: A Valentine's Day Story

Carolyn Gannett, San Diego Sheriff's Department Crime Laboratory

It's Valentine's Day, and it's cold, grey, and drizzly. A wife calls 911 to report her husband had gone jogging that afternoon and still had not returned to their horse ranch. It's now 7:30 in the evening. Search and Rescue descends upon the rural area and fans out along his usual jogging routes. They find his rain-soaked jacket, discarded in the gutter of a main road. Not far away they discover his body, as lifeless, as wet, and just as discarded as his jacket. But his jacket fared better than his body, which is bloody, broken, dressed in jogging clothes, and sporting a ligature. At least it's not soaking in the pool of blood investigators would expect if he had been killed here. But, they find other clues: tire impressions and tracks from at least two different vehicles, shoe impressions ("Oh, no! Of course none of us deputies walked in that area where the impressions are!"—Yeah, right!), possible footwear and drag trails between the body and the tire impressions, but no pool of blood.

Back at the ranch, the family mourns inside while investigators spend all day traipsing 40 acres in the cold rain. A few minutes into the consent search and they quietly agree the murder scene is probably in the house. They had found rope that looked just like the ligature, and a truck, the right size with the right tires mounted in the right places to put it at the body site. Finally, they politely remove their muddy shoes and enter the house. They find nothing visually. But, in front of a bed stand beside the master bed, a stocking-footed investigator feels a wet carpet underneath. She looks more closely: blood stains, missed in a cleanup attempt. A search warrant reveals the need for bloodstain pattern interpretation. The investigation inside the house continues all night, with the mourning family trying, or pretending, to sleep. Investigators find bloody fingerprints, including one on a syringe containing traces of a potent horse tranquilizer. Fluorescin reveals the husband's blood on the truck bed. By late morning the wife is arrested for the murder of her husband. She is ultimately found guilty. Some Valentine's Day.

No Charge For Shipping & Handling: LA County Coroner Cases Involving Decedents in Containers

Mark Schuchardt, Los Angeles County Department of Coroner

A survey of containers used to hide or dispose of bodies encountered in Los Angeles County.

The Los Angeles County Coroner Special Operations and Recovery Team (SORT)

Elizabeth Miller, Ph.D., Forensic Anthropologist, Lieutenant Erik Arbuthnot, California State University Los Angeles, Los Angeles County Dept. of Coroner

The Los Angeles County Department of Medical Examiner / Coroner (LACDOC) is one of the busiest such offices in the United States. In 2000, the LACDOC certified 9,156 cases. It is estimated that approximately 75 of these cases involved multiple decedents (multiple fatality incidents), mass fatality incidents, special decedent recovery, and buried body recovery. Because of the difficulty in processing such scenes, the need for specialized training was recognized, and in 2001 the LACDOC created the Special Operations and Recovery Team (SORT).

The SORT is a special program of the LACDOC, staffed by specially selected and trained coroner investigators, criminalists, forensic technicians and forensic attendants, and

other experts, including an anthropologist and an archaeologist. SORT is designed to provide field assistance in cases needing special handling, or traditionally needing assistance from outside agencies.

The LACDOC is, to the knowledge of the authors, the only county agency in the country to initiate such a team. The reasons for this are likely many, but prominent among them is the large number of "special" cases seen in Los Angeles County. Through the use of case studies the utility of teams such as the LA County Coroner's SORT will be illustrated, particularly from the standpoint of evidence recovery.

Animal Investigators: Arson/Bomb Dog, Narcotics Dog, Cadaver Dog, Scent, Search & Rescue Dog

Arson: Frank Oglesby, LAPD, Narcotics: Sgt. Robert Mueller, LASD, Cadaver: Joe D'Allura, LASD, Scent, Search & Rescue: Ted Hamm, LASD

During this special segment, our brave and talented canine members and their trainers will give a presentation on their training and duties on the job.

World Trade Center—New York Disaster Slide Show

Investigator Emil Moldovan, Los Angeles County Department of Coroner

The presentation has 104 slides and discusses the various efforts taken in New York. The discussion will involve DMORT (Disaster Mortuary Response Team), DMAT (Disaster Medical Assistance Team), USAR (Urban Search and Rescue) and FEMA (Federal Emergency Management Agency). While I do not pretend to speak for the various agencies involved, the attendees will get an overview of how these agencies respond to major disasters and coordinate rescue and recovery efforts.

Detecting a Staged Crime Scene

W. Jerry Chisum, Life Member, CAC

A crime scene is staged when someone deliberately tampers with the evidence to change the direction of the investigation. Usually this is to direct the investigation away from them selves. The most common staging is to make a homicide appear to be a suicide, however it can also be to make a suicide appear to be a homicide. Framing someone for the crime is a special case of staging. The problem is in detecting when the crime scene is staged.

The author describes some of the evidence that can point to staging. This includes the position of hair, and clothing, shoes, bloodstains and firearms evidence.

Forensic Testing at the U.S. Army Yuma Proving Ground

Jim Roberts, Ventura Co. Sheriff's Forensic Science Laboratory

Over the past several years the U.S. Army Yuma Proving Ground along with the Arizona Department of Public Safety and The Southern California Firearms Study Group has hosted a test session for firearms examiners each fall. The test sessions have allowed the testing of a large number of firearms with Doppler radar and high-speed video and a look at a number of firearms phenomena. The presentation will explain some of the history and show some of the data and images produced over the past several years.

Blue Inks and UV-Visible Microspectrophotometric Analysis

Dr. Paul Martin, CRAIC Technologies, 2400 N. Lincoln Ave., Altadena, CA 91001

Blue inks are one of the most common found on Questioned Documents. Yet they are also one of the most difficult to analyze. The purpose of this paper is to show the results of a novel analysis of a series of commonly occurring blue inks. The deep UV spectra (220 to 400 nm) of a samples as small as 4 microns were analyzed by measuring the transmission of the raw ink, the transmission of the ink on paper, and the reflectance of the ink on paper. The results are compared and discussed.

The Forensic Characterization of Glitter Cosmetic Particles

Scott Kirkowski, Intern, Naval Criminal Investigative Service Regional Forensic Laboratory, 3405 Welles St. Ste. 3, San Diego, CA 92136-5018

Glitter particle cosmetic products are very popular among young women and teenage (and even preteen) girls. There is a high probability of transfer of these particles in sexual assaults, abductions, or any crime where there is intimate contact between victim and assailant (or environments associated with a suspect such as his apartment or the trunk of his car). Assisted by a grant from the A. Reed and Virginia McLaughlin Endowment Committee of the CAC, under the direction of Senior Chemist Robert Blackledge, the Naval Criminal Investigative Service Regional Forensic Laboratory in San Diego is developing a protocol for the detection and recovery of glitter particles from evidence items and crime scenes, and for their comparison and characterization. Glitter particles were detected using the naked eye, white light, and an alternate light source. Recovery methods tested included individual particle picking with fine forceps, scraping clothing items over butcher paper, and various methods of tape lifting. Different particle types were characterized by microscopic examination and cataloging using an Inf~500TM CCD Video Microscope (Moritex Corp., Tokyo, Japan) along with VisionGaugeTM software (VISIONx Inc., Pointe-Claire, Canada). Additionally, particles were examined with a Video Spectral Comparator (VSC I, Foster & Freeman, England), and selected particles were examined with an FT-IR Microscope. Initial indications are that although there are numerous glitter cosmetic products on the market, in the USA most of the glitter particles used in these products are made by one manufacturer, Meadowbrook Inventions, Inc., Bernardsville, NJ. The glitter cosmetic particles are made from polyethylene terphthalate (PET) film but can be of several different colors, sizes, shapes (hexagonal, square, rectangular) and may have surface coatings on one side. This talk will discuss detection and recovery methods, demonstrate characterization methods, and with numerous video microscope images illustrate the wide variety of glitter cosmetic products in terms of shape, size, color, and surface morphology. Although at this point incomplete, in addition to a protocol, this study will eventually produce on CD a catalog of different glitter particle types. This CD will be made available to other crime labs and will be read / write so that future additions may be made.

Glitter Particle Traces: An Assessment of Evidential Value

Klaya Aardahl, Intern, Naval Criminal Investigative Service Regional Forensic Laboratory, 3405 Welles St. Ste. 3, San Diego, CA 92136-5018

The previous talk by Scott Kirkowski detailed the preliminary results of a study (funded by a grant from the A. Reed and Virginia McLaughlin Endowment Committee of the CAC) of glitter particle cosmetic traces. Yes, glitter particle cosmetic products are very popular among young women and teenage (and even preteen) girls. And yes, there is a high probability of transfer of these particles in sexual assaults, abductions, or any crime where there is intimate contact between victim and assailant (or environments associated with a suspect such as his apartment or the trunk of his car.) Certainly it would seem reasonable that glitter particle cosmetic traces might help to provide an association between a suspect and the victim. However, consider the following scenario:

A sexual assault victim was wearing a glitter cosmetic product. Some glitter particles matching this product are recovered from the clothing of a suspect. The case goes to trial and the prosecution presents the evidence. But upon cross examination, the defense attorney states: "Today, these glitter particle cosmetic products are so popular that they are virtually everywhere. My client could have picked up these glitter particles on his clothing from just about anywhere!"

Unless this assertion can be refuted with solid scientific data, the usefulness of glitter particle trace evidence in helping to establish an association between the victim and the suspect would be considerably weakened. From the assortment of different brands and types of commercial glitter cosmetic products collected and characterized by Scott, I have selected four different specific types as "target particles." By specific, I mean specific in terms of size, shape, color, surface morphology, and chemical composition. I then made arrangements to make tape lifts at booths in local bars and restaurants. Arrangements were also made to make tape lifts of the back seat of police cars when they were brought into the station at change of shift. These tape liftings were then searched microscopically to help give insight into the following two questions: 1) In general, how ubiquitous are glitter particles in the general environment? 2) If one has a specific target particle, how likely is it that one or more of these particles would be picked up on one's clothing? Results of these searches will be presented, and their significance in assessing the evidential value of glitter particle trace evidence will be discussed.

Psychotria viridis, A Botanical Source

Robert D. Blackledge, Senior Chemist, Naval Criminal Investigative Service Regional, Forensic Laboratory, 3405 Welles St. Ste. 3, San Diego, CA 92 136-5018, Charlotte M. Taylor, Ph.D., Curator, Missouri Botanical Garden, P.O. Box 299,*

website: www.mobot.org / MOBOT / Research / curators / taylor.shtml

N,N-dimethyltryptamine (DMT), a Schedule I Controlled Substance, was identified by GC / MS in a sample of dried leafy vegetable material that was subsequently identified as *Psychotria viridis* (Rubiaceae), a tropical shrub native to Central and South America. The chemical identification of DMT in the unknown vegetable material was straightforward. However, its botanical identification was a challenging mystery for the presenter (RDB). This talk will take the audience along this mystery trail, with stops at Google (the Internet search engine), the curator of botany at the San Diego Natural History Museum, a search of the website of the Missouri Botanical Garden (with ultimate location of Dr. Taylor), a convoluted drive through the bureaucratic maze of the Drug Enforcement Administration's Office of Diversion Control, and finally a successful transfer of a part of the sample to Dr. Taylor and its positive identification. [Yes! I was right! It was Col. Mustard with a candlestick in the library!] Along the way, the audience will learn something about the ethnobotanical use of this plant as a hallucinogen by many indigenous peoples in tropical South America, and with drawings from Dr. Taylor the botanical characteristics of *Psychotria viridis* will be illustrated and described.

And to conclude this mystery tour, the audience will learn of an Internet site where this vegetable material was likely procured.

A Brief Evaluation of a Reflected Ultraviolet Imaging System (RUVIS) For Forensic Evidence

Kevin Andera & Laurie Crutchfield, Orange County Sheriff-Coroner Department, 320 N. Flower St., Santa Ana, CA 92703

Our laboratory obtained a demonstration model of a Reflected Ultraviolet Imaging System (RUVIS) from SPEX Forensics (brand name of Scenescope) for a two-week evaluation. The RUVIS consists of an external UV light source and a handheld imaging device. The imager is composed of a UV filter, quartz optics, a photomultiplier, and a view screen. An image capture device such as a 35mm camera, digital camera, or video camera can be attached to the imager.

Certain evidence which is not visible in normal light can been' seen through the imager when illuminated with ultraviolet light. The Scenescope is marketed primarily for the detection of latent fingerprints prior to any chemical treatment. Therefore, the device was tested with a 254 nm UV filter, a wavelength at which latent fingerprint residues are highly reflective. In addition to latent prints, any substance that has a high degree of IJV reflectivity or absorptivity compared to the background can be seen. The RUVIS can also be fitted with a 320 nm filter to visualize bruising on live subjects after it has faded past visibility on the surface of the skin. A special Luminol filter allows photography of bloodstains in less than totally dark rooms or after the luminescence has faded below normal visibility. (Neither of these filters was available with the demo model we tested.)

We examined several different types of forensic evidence with the 254 nm filter. The RUVIS successfully visualized remnants of flaked-off blood on finished wood, bloody fingerprints on black tile, bloodstain patterns washed off of painted drywall with 10% bleach, undiluted semen on white cotton / polyester and blue denim, pepper spray on white tile, shoeprints in dust, white fibers on a background of a different white fiber cloth, and undiluted blood on black paint. We were also able to see untreated fingerprints on a variety of smooth, nonporous surfaces. Fingerprints that had been processed with cyanoacrylite stood out with even more contrast. We were unable to detect painted over blood, semen and saliva on cloth (except as mentioned above), blood on cotton cloth after washing with 10% bleach, pepper spray on cotton cloth, and fingerprints on rough or porous surfaces. Additionally, when fingerprint target surfaces were developed with black powder all of the prints seen by the RUVIS were made visible, as well as several additional prints not seen through the imager.

One of the main advantages of the RUVIS is the ability to rapidly scan a large area for evidence from a distance of 10 to 15 feet. Fingerprints and the shoeprint in dust were easily vis-

ible from this distance. This particular model was also able to take extremely close-up images to capture fine detail. However, the UV reflectivity of items is highly dependent on the incident angle of the lighting, and we found it required two people to successfully search an area: one to hold the UV lamp at various angles and the other to operate the imager. The greatest deterrent to using RUVIS on biological evidence is the fact that 254 nm light can rapidly destroy DNA in body fluids.

SWGDRUG: Phase Two

Jerry Massetti, CA Criminalistics Institute, 4949 Broadway, Room A-104, Sacramento, CA 95820-1528 and Gary Chasteen, Los Angeles County Sheriffs Laboratory, Scientific Services Bureau, 7717 E. Golondrinas St, Downey, CA 90242

The Scientific Working Group for the Analysis of Seized Drugs (SWGDRUG) continues to develop recommendations for minimum standards for the forensic examination and analysis of seized drugs. SWGDRUG has begun Phase II of its efforts.

An overview of recent SWGDRUG Core Group meeting activities will be presented. The process SWGDRUG is using to develop recommendations and to communicate them to the forensic community will be described. Changes to the organizational makeup of SWGDRUG will also be discussed.

Excerpts from the CAC's "E-News Update" 02/14/03

CAC Awards Committee Announcement- Call for judges

submitted by Kevin Andera, Awards Committee Co-Chair

CALL FOR JUDGES

As you may know, the Association has an award for the best paper at each Seminar. The Alfred A. Biasotti Most Outstanding Presentation award is given twice a year, and consists of a $200 stipend, a Merit Award certificate, and the publication of the winning paper in the CACNews. This award is unique in that the winner is not selected by a committee or the Board, but by a panel of judges selected from the Membership. The judges are selected from a list generated by the Awards Committee, who attempt to ensure that the panel represents a broad spectrum of the areas in criminalistics. The criteria for this list are:

1. Compiled from members of the association
2. Approved by majority vote of the Awards Committee
3. Every attempt will be made to vary the judges who serve on the panel at each seminar
4. A paper presented by a member of the panel is not eligible for the award
5. The Awards Committee will provide the judges with a suggested method of rating the presentations prior to the Seminar.

Given these standards, it can be very difficult to locate people willing to be a judge prior to a Seminar. Therefore, we are asking all Members to consider adding their names to the list of potential judges. Adding your name to the list would not obligate you to be a judge, it simply lets us know that you are willing to be contacted should we need volunteers. Although we are sure no one would want to miss a single one of the many excellent presentations at a seminar, it is only necessary for judges to be present for papers presented by Members. However, this usually requires that you attend the entire Seminar. Currently, only papers presented at the technical meeting are eligible, and not workshop presentations.

If you would like to volunteer, please contact either Julie Leon (julie.leon@mail.ventura.ca.us) or Kevin Andera (rd11311@fss.co.orange.ca.us) to be added to the list. The judging process itself is quick and easy, and the few extra minutes you spend on this task will be greatly appreciated by the Awards Committee and the entire Association.

Conference speaker request

Submitted by Marvin Spreyne

This year's annual forensics training seminar of the California State Division - International Association for Identification is scheduled for May 5th through May 8th.

The speakers Chair is Cathy Kibbey - Bakersfield Police Department, and I believe it would be a benefit to the attendees if we had a criminalist speak on the topic of Paint Transfers.

Could you please check with the members of the California Association of Criminalists if someone is available to speak to our group?

In essence, we would like a talk on what to look for, how to document, the proper procedure on collection, packaging, transporting and storing and what the criminalist actually does with the evidence. We would appreciate if the criminalist would speak twice, and preferably on Thursday May 8th.

Contact Information:

Cathy Kibbey
Bakersfield Police Department
Direct: 661-326-3565
Email: ckibbey@ci.bakersfield.ca.us

Marvin Spreyne
Riverside County District Attorney's Office
Direct: 760-863-8984
Email: mspreyne@co.riverside.ca.us

CAC Salary Survey 2002-2003

The latest Salary Survey is posted on www.cacnews.org. Click on Archives.

Edward F. Rhodes Memorial Award 2003
Announcement

Applications are being accepted for the annual **Edward F. Rhodes Memorial Award**. The Awards Committee must receive applications and sponsorship forms by **Friday May 16, 2003.**

Ed Rhodes was a long time criminalist nationally recognized for his trace evidence work, certification effort, and teaching ability. Wherever Ed went, teaching and training were not far behind. He thoroughly immersed himself in the education of forensic scientists, other criminal justice professionals, and students. His ultimate goal was competency in the criminalistics profession. This lead to the CAC Certificate of Competency program and, subsequently, a national certification program run through the American Board of Criminalistics. Ed believed in competency through knowledge, education, and training.

Towards this goal, donations from friends and colleagues were made in Ed's memory and the CAC established the Edward F. Rhodes Memorial Award.

The purpose of this award is to give a CAC member who is preparing for a career in criminalistics or is newly employed (less than three years) in the field of criminalistics the opportunity to attend a major forensic or scientific meeting of benefit to forensic practitioners. Examples of forensic meetings can include, but are not limited to, CAC Semi-Annual Seminars, American Academy meetings, International Symposia, or other regional association meetings. Examples of significant scientific meetings are InterMicro and Promega.

The award will cover travel, lodging, and registration expenses up to $500. This amount may be adjusted by the Board of Directors based on income of the fund and meeting costs.

In the spirit of professionalism as exemplified by Ed, an ideal candidate should be willing to give some of himself or herself to the requested event. In the case of attending a meeting, the effort may be in time or money, but an applicant who proposes to share ideas, or otherwise participate actively in the meeting or training would receive greater consideration.

The award will also include a plaque reads:

"Granted in memory of Edward P. Rhodes III to honor his commitment to the field of Forensic Science and to the California Association of Criminalists."

APPLICATION

The application (following pages) is to be filled out by the CAC member and is to include the following:

1. Name of the specific meeting.
2. A brief written statement outlining the applicant's reasons for attending this meeting and what he/she hopes to gain by attending.
3. Applicants to articulate commitment of time/money beyond the award allocation.
4. Sponsor information.
5. Estimated expenses.

SPONSORSHIP

A Sponsor Form (following pages) is to be filled out by the sponsoring CAC member and sent separately to the Awards Committee.

All applications and sponsor forms should be sent to the Awards Committee Chair. The Awards Committee will evaluate all applications and select the top three candidates. These applications will be forwarded to the Endowment Committee for final selection.

CAC Awards Committee, Julie Leon, Chair
Ventura County Sheriff Crime Lab
800 S. Victoria Avenue, Ventura, CA 93009
Tel: 805-654-2333, FAX: 805-650-4080

If you have questions or need further information please contact Jim Stam 2002/2003 Endowment Committee Chair, at:

Jim Stam, San Diego Police Department
Forensic Science Section
1401 Broadway MS 725
San Diego, CA 92101
Phone: 619-531-2605
FAX: 619-531-2520

2003 Edward F. Rhodes Memorial Award

Application Form

All 2003 application forms must be **received** by the Awards Committee by **Friday, May 16, 2003** for consideration.

1. Applicant Information

Name:

Address:

Phone #:

CAC Membership Status: (circle one) Affiliate Provisional Corresponding Member

2. Meeting Information

Meeting Name:

Location:

Date(s):

Attach a brief statement that describes how the meeting is of benefit to forensic practitioners, reasons for wanting to attend (e.g. paper presentation, poster session participant, taking certification exam, etc.), and the benefit to the applicant.

3. Sponsor Information

Name:

Address:

Phone #:

CAC Membership Status: (circle one) Affiliate Provisional Corresponding Member

4. Estimated Expenses

Registration: $

Travel: $

Lodging: $

Meals: $_____

TOTAL: $

Applicant's Name_____ Signature_____Date_____

Send completed application to:

CAC Awards Committee, Julie Leon, Chair
Ventura County Sheriff Crime Lab, 800 S. Victoria Ave.
Ventura, CA 93009
Tel: 805-654-2333, FAX: 805-650-4080

The Awards Committee will screen all applications and forward the top three candidates to the Endowment Committee for final selection.

2003 Edward F. Rhodes Memorial Award

Sponsor Form

Please complete this form by providing the requested information. Additional pages may be used to complete a response. The Sponsor Form must be received by the Awards Committee by **Friday, May 16, 2003.**

1. Applicant's Name:

2. Is the applicant employed in the forensic sciences? Yes No

If yes, where and how long employed?

If no, describe the applicant's activities in preparing for a career in forensic science.

Please describe how the applicant has shown initiative or potential in professional development.

_____	_____	_____
Sponsor's Name	**Signature**	**Date**

Sponsor's Phone # _____

Send completed form to:

Julie Leon, Awards Committee Chair
Ventura County Sheriff Crime Lab
800 S. Victoria Avenue
Ventura, CA 93009
Tel: (805) 654-2333
FAX: (805) 650-4080

The Awe of Mystery, Science and Discovery

Final Column Appreciations

This will be my last column as editorial secretary. It has been two years since I took this position and I have enjoyed being a part of every issue. I greatly appreciate the efforts of all those who have contributed to the news magazine. It is not easy. I want to thank John Houde for his tireless dedication to bringing a quality product to our membership. I want to thank Jennifer Shen, my technical editor, for providing a tireless, finely tuned eye not only for the various submissions, but for my own writing as well. Finally, Mark Traughber deserves many kudos for his work on our excellent *cacnews.org* website.

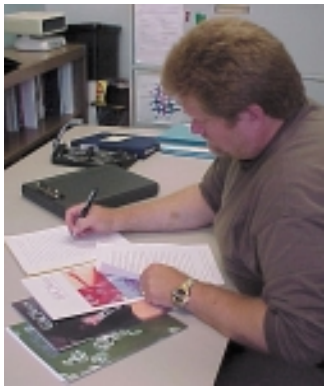
Channel Surfing Surprise

I am going to share with you a moment of pure delight that I had while channel surfing across the many different science and discovery channels available through digital TV. What I learned that day was that our planet still has unfathomable mysteries that await our discovery. This particular mystery just so happens to coincide with my fascination with Antarctica (John Carpenter's *The Thing* being my favorite movie, followed by *Ice Station Zebra,* and the *X-Files* episode, *Ice.*) There is something inherently mysterious in the cold isolation of our polar caps.

In the late 1990's, an almost accidental correlation of various scientific documentation that was decades old occurred. Images from satellite photography, seismology charts, and radar, revealed the presence of a subterranean, fresh water lake located two miles below the surface of Antarctica; this lake has been buried below the frozen ice for millions of years. From satellite imagery and seismological studies, this lake, named Lake Vostok after the Russian observatory, appears to be as big as Lake Ontario and as deep as Lake Tahoe. What is even more astounding is the fact that scientists believe that the waters of Lake Vostok may give us answers as to the possibility of life on the moons of Europa and Ganymede, as well as the icecaps of Mars. Satellite imagery indicates the presence of similarly buried lakes in those galactic locations.

The Vostok waters are believe to be pristine, giving us a picture of a sealed environment that is perhaps as old as when Antarctica was green and lush. We do not know what types of life may be in the Vostok waters but our drive for discovery is driving the development of new technologies that will allow us to access the waters for the first time. Vostok is the equivalent of a newly discovered planet that is, at this moment, agonizingly just out of reach.

It has been two years since I took this position and I have enjoyed being a part of every issue.



John Simms
CAC Editorial Secretary

Why can't we reach down and take a sample of water in the same way we currently take our ice core samples? Our current sampling of deep ice core samples involves petroleum lubrication of the drill bits. Hence, Vostok has been the called the biological equivalent of the *Heisenberg Uncertainty Principle* in that it is impossible to separate the experimenter from the experiment; there will be some disturbance or effect upon the subject matter. Any attempt to break through the ice cap would immediately introduce microbial contamination from the drilling equipment. The question is, how do you sample the waters of Vostok without experimenter alteration? We have drilled down as daringly close as we can. Scientists are assuming that the deep ice core samples just above the waters of Vostok are essentially a picture of what to expect from Vostok itself.

Our remaining steps in this mystery have to await the arrival of new technology that will not only allow us to explore Vostok without alteration, but may allow us to explore what are thought to be similar sub-ice lakes on the moons of Europa and Ganymede, as well as Mars.

On the surface of Antarctica, scientists kept any work associated with Vostok lake restricted to a clean-air location at the end of the lakebed, where air currents are upwind from the Antarctica observatory and the runway where supplies and materials are regularly delivered.

The new technology that is being developed includes drill bits housing microrobotics and methods to melt the ice in front of the drill, then refreeze the ice behind the drill sampler.

John Simms, cont'd

Until then, the National Science Foundation will continue to provide resources and materials for the non-invasive exploration of Vostok, such as continuing aereogeophysical surveys, magnetics, and laser altimetry. As we reach farther into space, and indeed we must continue to reach despite our frailties, imperfections, and occasional tragic failures, the technologies we need for space exploration will benefit from explorations right here on our own little world. The mysteries of life development and survival in the harshest of environments await us in the waters of Vostok. What we learn from exploration here will answer questions that we have for out there. This is the awe of mystery, science, and discovery.

A Final Indulgence

As I close out this last column, I want to take just a few more minutes for a montage of final thoughts:

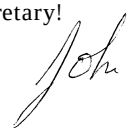
War: War may have started by the time this sees print. All I can say is that sometimes the moral obligation to do what is right has to be undertaken by those who have the ability to do so. Saddam Hussein is a murderous thug who should have been taken out of power a long time ago. This is my own opinion and does not necessarily reflect those of management.

Crime Scene: Larry Ragel's *Crime Scene* book is really a fun read that blends real crime scenes with the traditional teachings of forensic science. I know many of the people in this book so the book really struck a chord with me. It moves between the presentation of the crime scene and the explanation of how the physical evidence relevant to that crime scene is analyzed. It is extremely current and comes across as a written version of the television show *CSI*…….and I mean that in a most complimentary way. This is material that you can take into the classroom. Good job, Larry!

CSI: I love to watch *CSI* on CBS. I do not watch it to learn about forensics. I watch it because it is a very well-written, dramatic TV series meant for nothing more than to entertain. Each week's episode has multiple stories and reconstructions that change as new evidence is uncovered until the re-enactment is correct. Do not use it for the classroom.

CACNews: The *CACNews* magazine is a good product, but it could be better. It needs more contributions from all of you. Please take the time to write and share with your fellow criminalists. We will all be the better for it.

The best of luck to the new editorial secretary!



Evaluation of *Law Enforcement Technologies Inc.* ISID-1 "Instant Shooter ID Kit"

Lance Martini and Anthony DeMaria, San Diego Sheriff's Crime Laboratory, San Diego, CA.

Key Words: dermal nitrate test, diphenylamine, false positive, gunshot residue, Instant Shooter ID Kit, ISID-1, nitrates, paraffin test, presumptive test

ABSTRACT

Recently, a product demonstration was conducted by Law Enforcement Technologies Inc. at the San Diego Sheriff's Department. The ISID-1™ (Instant Shooter ID Kit) was demonstrated as a presumptive test for the presence of gunshot residue. It is a colorimetric test based on the detection of nitrates by use of diphenylamine. The ISID-1 kit is an updated version of the "Dermal Nitrate" or "Paraffin" test. This article will address some issues and concerns related to the use of "The Instant Shooter ID Kit."

On April 10th, 2002, a product demonstration was conducted by Law Enforcement Technologies Inc. to introduce a presumptive gunshot residue kit identified as "Instant Shooter ID Kit". The demonstration was conducted at the San Diego Sheriff's Department Miramar Shooting Range.

Product Description

The ISID-1™ (Instant Shooter ID Kit) is a "non-invasive field portable test kit", a presumptive test designed to test for the presence of gunshot residue.[1] Review of advertising material by Law Enforcement Technologies Inc. states that the "ISID-1™ … will provide immediate information identifying gunshot residue"…"will provide the law enforcement community with immediate confirmation of recent gun use…" and also the ability to "determine whether or not the person who had been swiped had recently fired a gun." [2, 3, 4]

The ISID-1™ is a colorimetric test which is based on the detection of nitrates from residual nitroglycerine and nitrocellulose (gunpowder components) by the use of diphenylamine. The diphenylamine is clear in the prepared solution and when oxidized by nitrates, a blue color is formed. [5]

Brief History of Diphenylamine Testing in Law Enforcement

Diphenylamine testing, also known as the "Dermal Nitrate" or "Paraffin test" was first introduced into the United States in 1933 by Teodoro Gonzalez of the Criminal Identification Laboratory, Mexico City police headquarters as a means of testing for gunshot residues on the hands of suspected shooters. [6,7] The collection of gunshot residue particles from the suspected shooter was performed by applying a thin layer of paraffin to the hands, and upon cooling, the paraffin casts were removed and treated with an acid solution of diphenylamine. A positive test was indicated by the presence of blue flecks.[8,9]

Product Demonstration Testing

As part of the product demonstration, Law Enforcement Technologies Inc. agreed to the following test. The clean hand of a volunteer was sampled with an ISID-1™ kit to confirm the lack of gunshot residue particles. After obtaining a negative result, a trace (invisible) amount of ammonium nitrate was placed on the same hand of the volunteer by a third person (to minimize the potential for contamination). The same hand was

again tested with an ISID-1™ kit with a strong positive result.

Discussion

The ISID-1™ product is a variation of the original dermal nitrate test, the basic chemistry is the same with modifications to the collection and testing aspects, which make this test significantly more "user friendly" in it's application.

Diphenylamine testing, as used in law enforcement, is based on the oxidizing properties of the nitrates and nitrites (hopefully) associated with gunpowder.[10,11] The presence of nitrates and nitrites within our environment is ubiquitous and exposure to these non-firearm / non-gunshot residue sources will often yield positive results.[12,13,14] One common source of nitrates are fertilizers, which are known to produce positive results with the diphenylamine test.[15,16] The list of environmental sources of oxidizing compounds is extensive and concerns about the non-specificity of the diphenylamine reagent date back to the 1930s and 1940s in scientific journals and law enforcement bulletins.[17,18] Testing performed by the FBI demonstrated positive results from a number of environmental sources to include tobacco residue on the hands of smokers.[19,20] As stated in a 1940 FBI law enforcement bulletin: "The suspected person may have handled one or more of a number of substances in the course of his daily living which give the same positive reaction for nitrates or nitrites." [21]

An extensive evaluation of the paraffin test was conducted by M. E. Cowan and P. L. Purdon and published in 1967.[22] Their finding was that the "paraffin test failed to establish any significant distinction…between groups of individuals known to have fired guns and individuals known or presumed not to have fired guns." [23] The Cowan / Purdon evaluation effectively attained the same results and reached the same conclusions as those of the FBI Laboratory in the 1930's and 1940's.

An area of lesser concern then "false positives" are instances where an individual has discharged a firearm and subsequent testing produces a negative result; "false negatives." This possibility exists not only with diphenylamine testing but with other forms of testing as well. The reported sensitivity of the ISID-1™ kit would be expected to minimize "false negative" concerns to the extent that this test appears to be very sensitive to nitrate and nitrite particles if they are present on the hands of a suspect.[24] Note: Sensitivity claims by the manufacturer that positive test results can be achieved even after a gun firing suspect has attempted to "wash the traces of gunpowder off" may actually contribute to the problem of false positives. [25]

The Sandia National Laboratories report that was provided as part of the informational material on the ISID-1™ evaluates a narrow range of parameters, all of which reflect favorably on the test kit. No evaluation or critical review is present concerning the non-specificity of diphenylamine testing or of potential "false positives." [26]

Conclusions

The ISID-1™ kit is an updated and "user friendly" version of the "Paraffin test"; the basic chemistry has not changed and the concerns expressed in the 1930's and 1940's are still valid today.

The statements provided in the product advertising and testing, even the name of the product itself are misleading e.g. "Instant Shooter ID Kit" or the "Field Portable Gunshot Residue Kit." [27,28] Diphenylamine testing is not a test for identifying gunshot residue; it is a test for the presence of nitrites and nitrates and does not differentiate between sources. [29] In the law enforcement target market for this product, it would appear that any detected nitrite / nitrate particles on the hands of a suspected shooter are particles which are hopefully associated with gunshot residues.

"The paraffin test (and by extension the ISID-1™ kit) is in fact nonspecific and is of no use scientifically." [30] The concerns of non-specificity of the ISID-1™ kit need to be critically evaluated in light of its potential usefulness in the field and any legal issues associated with its documented "false positives."

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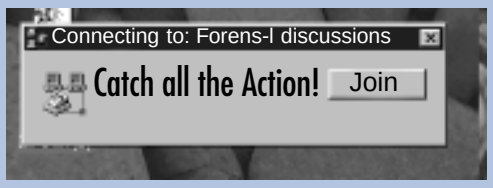
B O A R D O F D I R E C T O R S

California Association of Criminalists



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When Great Minds Join,

Great Things Happen!

NAWFS/CAC Joint Spring Meeting

April 7-11, 2003

Reno, Nevada

Contact Susan Harmon

sharmon@mail.co.washoe.nv.us

or call 775-328-2811