

# California Association of Criminalists

## MEMBERSHIP APPLICATION BLANK

The **CACNews**

News of the California Association of Criminalists • Fourth Quarter 2006

1. Name MORTON CHARLES V. LOS ANGELES, CAL  
Surname Given name(s) Place Date

2. Mailing Address 376 COLUSA AVENUE #1 BERKELEY 7, CALIFORNIA  
Street and number

3. Business Telephone No. 526-7 March 6, 1968

4. I am now engaged in the p  
Executive Committee  
California Association of Criminalists

and have been so engaged for  
Gentlemen:  
I wish to nominate Charles V. Morton for your consideration and vote of the membership for advancement to regular member. He has fulfilled all requirements as outlined in the Constitution, and I recommend him to your consideration.

5. If self employed:  
a) Name of your business

b) Address  
Street and number

6. If not self employed or both

PAUL L. KIRK

Address 372 COLUSA AVENUE BERKELEY 7, CALIFORNIA  
Street and number City (Zone)

7. Indicate category of membership being applied for:

a. ☐ Regular ☒ Associate ☐ Non-Resident

b. Indicate specialty category if not in general practice.





# The President's Desk

$$(E,V) + S = GT^2$$

Where have the good ol' days gone? How did we ever manage to get anything done in the time before email and voice mail? Imagine a time when we were a bluetoothless society, when the only thing clipped to our belt was maybe a set of keys, and the person standing next to us, talking, was actually talking to us.

We have given up that age of innocence and simplicity for speed and convenience. The new technologies are supposed to make us more efficient and effective but they bring peril.

An important safeguard against bad habits that can easily develop is:

$$(E,V) + S = GT^2$$

E, V = email or voice mail

GT = go talk

S = a situation needing attention

squared=emphasizes the importance

The translation is that if you have an email or voice mail that indicates a situation that needs attention, it is a really good idea to go and talk to that person rather than try to email it back and forth or play phone tag. This is, of course, internally speaking.

Speed and convenience have brought with them unintended consequences that can rise up and strike us down. We begin to get too fast by either not listening to our whole voice mail message or not reading the entire or subsequent emails. Who among us has not missed an important detail because we cut it short or hit reply or delete too fast?

Here are two real-life scenarios to illustrate this:

**Scenario #1:** A QA manager handed out a set of CTS samples at a meeting and asked that the supervisor let him know who it would be assigned to. After several days with no word back from the supervisor, the QAM called with an inquiry. The QAM received a voice mail back saying that the supervisor had no idea what the QAM was talking about, did not remember getting any samples, and that any deadline was just too bad. The QAM called and left a voice mail expressing some frustration with the supervisor, describing a plan to have the supervisor sign for everything from now on, etc. Later, the supervisor and QAM actually spoke live on the phone. The supervisor asked if the QAM had heard the whole message, and the QAM was confused. Right after the deadline remark, the supervisor had said, "Just kidding!" But the QAM had cut off the message off just before that and was left with a totally different impression of the situation.

**Scenario #2:** An email arrived in the QAM's box one day, and said that person A, who had been in training, was now running casework and oops me, if I was supposed to do something, I just forgot to do it, whatever it was. So the QAM said, well, a QA report will be coming to document this glitch and this can wait until I return from a business trip since the work has already started. The QAM said if you want to know what IT is, the supervisor should look up the policy so that they could learn it better. The supervisor, now hysterical, went to the QAM who was on the way out the door for the day, and there they sat for an hour, discussing the situation. The situation was, the QAM realized, still very much in an appropriate location on the timeline and the appropriate review of the completion of training and signoff could still take place without any QA report being necessary.

The supervisor told a colleague what had happened and the colleague looked surprised and said, "I never listen to the whole message, either!"

So in review of these two scenarios, how does our administrative equation come into play? Consider the voicemail situation. Obviously if the QAM had listened to the whole message, frustrations could have been avoided. But we develop these cut-it-off-early habits out of the speed and convenience factors. The supervisor told a colleague what had happened and the colleague looked surprised and said, "I never listen to the whole message, either!"

The equation gives us a conscious pause to help break bad habits. Even if you cut off the "just kidding" from the tail end, by following the rule, you can avoid the whole mess. The voicemail (V) indicated there was a situation (S) regarding the samples, and the QAM should not have reacted first, but gone to talk (GT) to the supervisor to learn what the real situation was. Oh... just kidding! Ok, so there is no problem. The supervisor and QAM could have both laughed much earlier and been done with it.

Now consider the email situation. The email



Please turn to page 21

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CAC President

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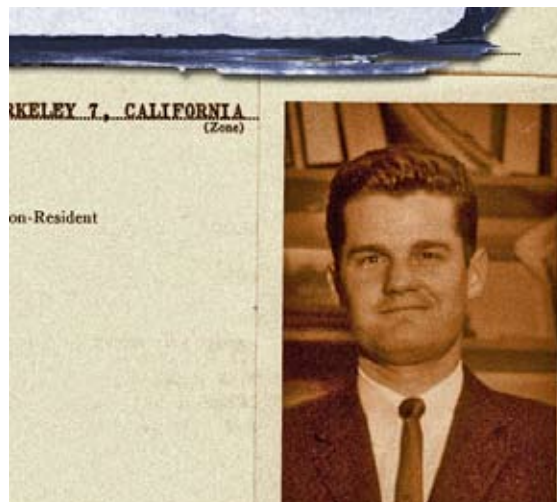
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***On the cover...***

*In honor of Chuck Morton's retirement, we present his original application for membership and subsequent elevation endorsement by Paul Kirk.*

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Because of the computerized typesetting employed in *The CACNews*, submissions should be made in the form of MS-DOS compatible files on CD or by e-mail (ronald.nichols@atf.gov). Text files from word processors should be saved as ASCII files without formatting codes, e.g. bold, italic, etc. An accompanying hardcopy should be submitted along with the file. Graphics, sketches, photographs, etc. may also be placed into articles. Please contact the editorial secretary for details.

The deadlines for submissions are: December 1, March 1, June 1 and August 15.

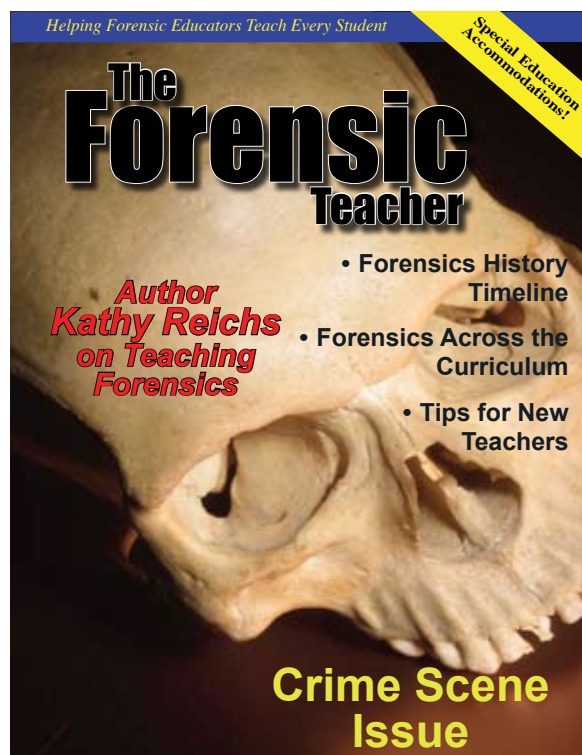
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# CACBits

## New Forensic-Related Magazines Appear

At least three new magazines featuring topics of interest to forensic professionals have appeared recently. Best of all these are available free of charge to qualified organizations. *Forensic Magazine* is published by Vicon Pub., Inc. For more information, visit [www.forensic-mag.com](http://www.forensic-mag.com). *Evidence Technology Magazine*, is published by Wordsmith Publishing. See [www.evidencemagazine.com](http://www.evidencemagazine.com) for subscribing information. Lastly, a new magazine devoted to the interests of teachers of forensic science, *The Forensic Teacher* makes its debut in September. Visit [www.theforensicteacher.com](http://www.theforensicteacher.com) for more information.



## Membership Snapshot

47

the number of  
nonpaying members

72

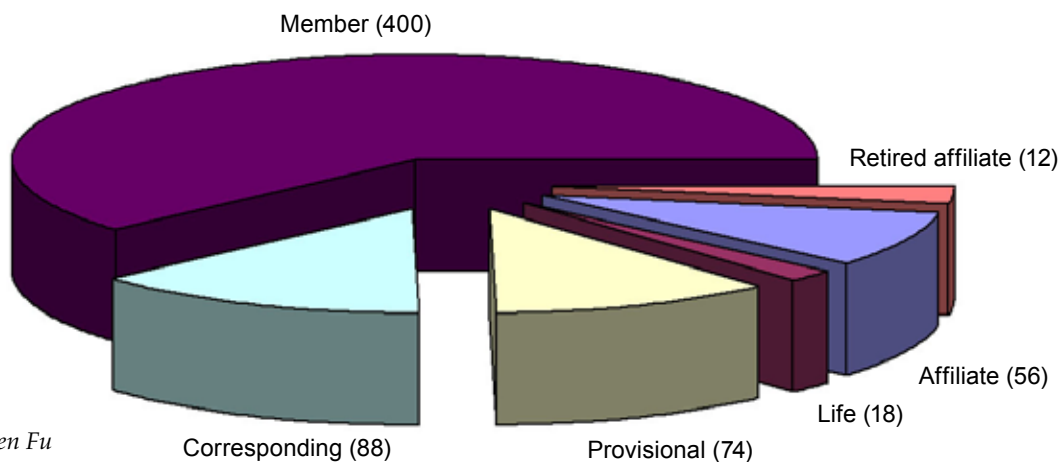
the number of members  
living outside California

North: 289

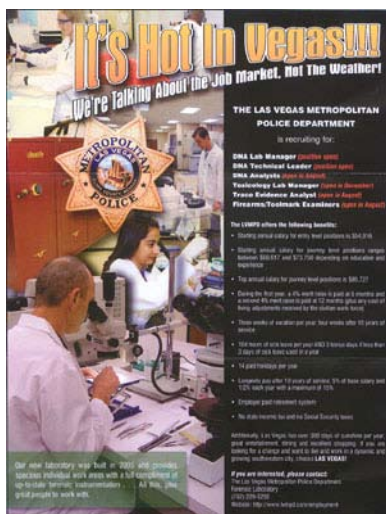
South: 287

Total: 648

Euclen Fu  
CAC Membership Secretary







## Viva Las Vegas

According to a recently mailed announcement flyer, Las Vegas Metropolitan Police Department Forensic Laboratory is recruiting for the positions of DNA Lab Manager, DNA Technical Leader, DNA Analyst, Toxicology Lab Manager, Trace Evidence Analyst and Firearms/Toolmarks Examiners. For more information on these offerings, visit [www.lvmpd.com/employment](http://www.lvmpd.com/employment).

## The Climate of Crime: Hot Topics & Cold Hits

### Seminar Highlights Announced

California Association of Criminalists  
108th Semi-Annual Seminar  
Temecula, CA October 9-13, 2006

### BOOK SALE

A 15% discount offered on the following titles: Crime Reconstruction; Forensic Investigation of Stolen-Recovered and Other Crime-Related Vehicles; Shooting Incident Reconstruction; Effective Interviewing and Interrogation Techniques; Serial Crime; Forensic Pathology; Forensic DNA Typing; Criminal Profiling; Fundamentals of Forensic Science; and Henry Lee's Crime Scene Handbook

### WINE & CHEESE TOUR

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### WORKSHOP TITLES/TOPICS AND INSTRUCTORS

- Adv. in Forensic Paint Examinations (Mon 10/9)  
Scott Ryland, FDLE
- DNA (Tues 10/10)  
TBA
- Breath Alcohol (Mon 10/9; half day 0800-1200)  
Rod Gullberg, WA State Patrol  
Greg Priebe, Cal DOJ Santa Rosa Laboratory
- Technical Writing (Mon 10/9)  
Ann Neumann, MA, JD, Writing Consultant
- Forensic Soils Examinations (Tues 10/10)  
Dr. Raymond Murray, Forensic Geologist  
Chris Palenik, Microtrace  
Dr. George Sensabaugh, UC Berkeley  
Dr. Robert Graham, UC Riverside  
Dr. Lynne Macdonald, Macaulay Institute, UK

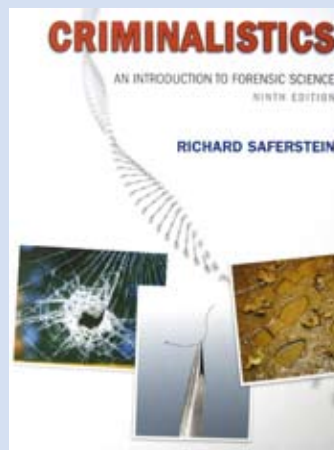
## FORENSIC BOOKSHELF

### Ninth Symphony

Review by John Houde

"CRIMINALISTICS: An Introduction to Forensic Science, 9th Ed."

by Richard Saferstein  
Pearson Prentice Hall  
651pp, illus, index, bibliog, CDs  
ISBN 0-13-221655-8, \$104 (Amazon)



"The best just got better," trumpets the first page of the just-released ninth edition of Richard Saferstein's venerable text, "Criminalistics, An introduction to forensic science." And, it is indeed impressive, color illustrations throughout, each chapter starting off with a highlighted case of great notoriety, including OJ, JFK, Tylenol tampering and the OKC bombing. These are just hors d'oeuvres to whet the reader's appetite, not

full case reviews. No, those come at the end of the book in the "Case Readings" section, where the reader is treated to a full-blown discussion of the forensic aspects of such cases as the "Bobby Joe Long Murder Case."

Many of the sidebars and highlights are reprints from other publications, such as the acerbic criticism of the OJ prosecution by former Los Angeles District Attorney Vincent Bugliosi. Each excerpt serves to make the particular chapter a more complete intellectual meal and therefore more satisfying for the reader.

Saferstein covers a broad territory, including computers as evidence, firearms, toolmarks, shoeprints, DNA, arson, explosives, drug analysis, and also an excellent discussion of microscopy. I was impressed by the inclusion of numerical aperture as a topic, although I had hoped to see a few colorful polarizing light photomicrographs.

Intended as an introductory textbook in a course on forensic science, Saferstein didn't forget the instructor. Each chapter opens with "learning Objectives" and closes with a short review quiz. Odd numbered answers are included in the back, along with recipes for commonly used laboratory development solutions such as ninhydrin.

As an added bonus, there are two CDs included on the inside back cover that contain the US Dept. of Justice's presentation "What Every Law Enforcement Officer Should Know About DNA."

The language is smooth and easy to read, without sacrificing scientific detail. Each chapter can be read by a browser, just enjoying the photos, or in more detail by a researcher, looking for the "how-to's" of the crime lab.

# The Editor's Desk

## Keeping perspective...

Israel and Lebanon are going toe-to-toe and we're still wondering whether or not Barry Bonds took steroids. Can we possibly move on?

## Maturity or sick and tired or maybe both...

When I was growing up I was consumed with professional sports. When I first moved out to California, I would record football games (and many sports) and watch them after my family went to sleep. Over the last couple of years I hardly watch any sports on television and record events even less. I like to think that I have matured a bit but my family may debate that point as they see me painting little toy soldiers. It probably has more to do with a bunch of immature, irresponsible, whining athletes who think the world owes them everything and that we should feel privileged just to watch their skills and pay for it to boot.

## Italy bound...

We bid a fond farewell to long-time CAC member and friend Chuck Morton. I had the privilege of working with Chuck albeit for a short time. The thing that stands out most—it would not take long at all before anyone spending time with him would re-think those inappropriate stereotypes of private criminalists who are “in it simply for the money.” Chuck truly enjoyed what he did and he did it with a diligence and integrity that we would all do well to emulate.

## Play it again...

*“Nearly all men can stand adversity, but if you want to test a man's character, give him power.”* —Abraham Lincoln

*“The leader who exercises power with honor will work from the inside out, starting with himself.”* — Blaine Lee, *The Power Principle*

*“It is said that power corrupts, but actually it's more true that power attracts the corruptible. The sane are usually attracted by other things than power.”* —David Brin

*“Any fine morning, a power saw can fell a tree that took a thousand years to grow.”* —Edwin Teale

## Be careful when you ask for your cake...

“If only I were in charge,” many have no doubt thought, “then things would be different!” The question I have for you is “Would they really be different or would the complaints just take a new form?”

## On a related but more serious note...

I remember talking about words with Chuck Morton

one day and he prompted me by asking what do I think of when I think of the word apple? Many things may come to mind ranging from apple pie to a computer to a granny smith. The question I pose this quarter is what comes to mind when you think of the word power?

One thing that comes to my mind is character. “If only I were in charge, then things would be different!” They certainly will because a person's character truly is tested by his or her exercise of power. The question we need to reflect on is, “If you were in charge, for who would things be most different?” It is a distinction of selfishness versus selflessness.

If you pursue power and honor for your own reasons and agenda, then things really will be different but only for your self. Is your pursuit for selfless reasons—to serve rather than to be served? If that is the case, the difference will not be limited to your self.

Often times we go into something feeling that our motives are selfless. Unfortunately, just as gold's purity may never be fully revealed without fire so too our character and our own motives will never be fully revealed without fire. We can proclaim the noblest of intentions. But, the true test comes only with a fire—the heat of which is directly related to the influence that position will bring with it. There are two ways to deal with the heat. The first is to blame the log generating the excess heat and trying to think of ways to get rid of it. The second is to do a self examination and skim off any impurities that are rising to the surface much like a metallurgist may skim off the dross as the gold rises in temperature. Selfish leaders will find ways to reduce the heat while selfless leaders acting with integrity and honor will learn from it.

Power comes with an illusion—an illusion that you must have power to bring about change and with power you can effect change. The reality is that change is brought about through influence. Furthermore, the level of a person's influence has more to do with his or her character than it does the power he or she wields. Frankly, there are many days I am glad I am not in charge! I do not have to deal with the every day



**Ron Nichols**

CAC Editorial Secretary

headaches that go along with the position and maintain the freedom to exercise influence in a positive manner. We never need to have a position in order to be selfless and do good. We can accomplish that from any station in life. I encourage you to seek that out before seeking out positions of honor and power.

Living in Northern California we have experienced the awesome power of the redwoods—gigantic in stature and strength. But, as awesome as they are, they can disappear with one misplaced spark or one overly eager logger with a chain saw. The point is simply when we think we have power, we really don't. In fact, it is when we stop seeking power for power's sake, when we surrender to the fact that in of ourselves we have no power, that we have the opportunity to discover the greatest power imaginable.

Until next time, my best to you and yours.

Row

FEEDBACK FEEDBACK FEEDBACK FEEDBACK FEEDBACK

### Metaphorical Dash

Just had to drop a line. Really enjoy your editorials in *CACNews*. The last one about the dash between the years on headstone was really good—especially for those of us in the September of our years. [*Dot, Dot, Dash, CACNews, 3rd Q 2006*]

Thanks for all you do.

Lou Maucieri  
Sacramento

### A Good Read

What follows is not a “book review”, but rather a “book recommendation.” I’m sure the readers of the *CACNews* would really enjoy *One Drop of Blood* by Thomas Holland. [Hardcover: 352 pages, Simon & Schuster, ISBN: 0743279913, \$24] I listened to it on CD and finished it two nights ago. The book on tape version is read by Patrick Lawlor. He does a marvelous job of changing his voice according to the character who is speaking (or thinking to themselves). I hate books on tape where the reader is constantly saying “he said” or “she said.”

The book has everything: really interesting and colorful characters; a good and believable plot; and forensic science crucial to the solution of the mystery. I don’t want to give anything away, but the book’s central character works for CILHI (the Army lab in Hawaii that tries to identify human remains from past wars). Because of a case that I was asked to assist in, the story gave me a real sense of déjà vu. Well, yesterday I sent Dawn Sorenson an email in which I highly recommended the book to her. Today Dawn replied: “I know Tom Holland. He is the Lab Director at CILHI.” I hadn’t known that. That explains why the technical details of the forensics were always spot on (and also why the inter-governmental agency squabbling and turf battles are also spot on). Not since Joseph Wambaugh’s *Fire Lover* (also a great read) have inter-agency pissing contests been covered with as much accuracy and humor.

Bob Blackledge  
ROF (Retired Old Fart)

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# The 藝術 of 戰爭 for the Expert Witness

## COMMAND AND CONTROL

### The Application of the OODA Loop to Courtroom Testimony

by Raymond J. Davis

This article was inspired by a suggestion from Bob Blackledge (1). He had read about a concept that could be applied to courtroom testimony. He briefly described the concept and believed that the information contained within it could help expert witnesses in the courtroom.

The book he read and loaned me was entitled, "Boyd: The Fighter Pilot Who Changed the Art of War", written by Robert Coram (2) and published in 2002. John Boyd was a Colonel in the Air Force serving both in the Korean and Viet Nam wars. He was a fighter pilot in Korea and served as an air force base commander in Thailand during the war in Viet Nam. His contemporaries believed his most important attribute was his tactical genius and that one day he would be ranked along side other great military minds from history such as Sun Tzu (author of "The Art of War"), General von Clausewitz and others. His service to the Air Force and the military was largely as a great tactical planner and theoretician. He was also responsible for the design and development of the F15 and F16 flown by both the Air Force and the Navy. I found his true life story compelling especially his work on the OODA Loop. (3) And I just liked the sound of the acronym standing for Observe, Orient, Decide, Act.



I will describe what the acronym stands for and share with you my insight and application of this phenomenal tactical strategy in the courtroom. Bob thought that my courtroom experience combined with teaching the “Courtroom Presentation of Evidence” classes over the years could make the OODA Loop ripe for application into the forensic field. He also thought experts might benefit from Boyd’s concept to make their time in the courtroom more productive and less traumatic. A depiction of the OODA Loop can be found at the end of this article.

I couldn’t wait to get to the chapter on the OODA Loop and started in the middle of the book. I read the chapter several times. The chapter doesn’t go into specific detail regarding the elements of the OODA Loop, and I have had to reason out some of the ideas incorporated in Boyd’s “time based theory of conflict”. Boyd’s work is all about conflict, particularly air combat. He talks about the enemy and working within the enemy’s time frame. The point of operating within the enemy’s time frame is to gain a tactical advantage and bring the enemy down. One way to accomplish this requires knowing the flight capabilities (strengths and weaknesses) of the adversary’s aircraft. Thus Boyd knew ahead of time what his adversary could do based on the aircraft’s capabilities. Boyd would avoid any maneuver that would shift the advantage to his adversary. By maintaining the advantage he would then fly in such a way as to use his adversary’s weaknesses along with his enemy’s inexperience to gain the advantage. Again, having the advantage meant simply placing himself in position to shoot down his enemy. Being on his ‘6’ as the pilots like to say. Nothing rattles a pilot more than having someone on their tail unable to elude them. Sun Tzu would have approved of Colonel Boyd’s tactical philosophy.

If a pilot can work within the enemy’s time frame he then reasoned the pilot has a tactical advantage in being one or two steps ahead of his adversary. By working within an adversary’s time frame a pilot (or expert witness) can think ahead of his opponent and then position himself to bring his armament to bear before his opponent can. Another way of looking at this concept is that an enemy is always one or two steps behind his opponent. That means he is constantly on the defensive instead of being on the offensive. And, it’s the offense that usually scores, in sports and in the air.

How does this concept apply to the courtroom? Perhaps a more important question is whether we have enemies in the courtroom. Since we testify in an adversarial system the short answer is yes. Webster defines adversary as, “An opponent, one who strives against us, an enemy.” There are no physical battles in the courtroom although it sometimes feels that way.



*Raymond Davis retired from the Department of Justice Jan Bashinski DNA Laboratory in 2004. He is a past president of the California Association of Criminalists. He currently travels around the United States training forensic experts the skills necessary to survive and thrive in the courtroom. This*

*year he has taught classes in Phoenix, AZ, Austin, TX, Beaumont, TX, Los Angeles, San Diego, Shreveport, LA and Boston, MA. Raymond lives in Eagle, Idaho with his wife Birgitta.*

What we’re really involved with is a verbal battle. And, we’re doing it on their terms and on their turf. They ask the questions and have the skills to maneuver and lead us sometimes against our will. They know the law better than we do. They know courtroom procedures better than we do. They clearly possess an advantage we do not possess. In other words they’re in control. In effect, we’re the ones who are one or two steps behind.

Over the past eighteen years I have met a lot of experts who were concerned about the lack of control in the courtroom, producing a sense of dread at being forced to answer questions designed to mislead, embarrass, and compromise their work and test results. I clearly remember that feeling early in my career, especially with a skilled attorney leading me down the garden path toward an uncertain and perilous ending.

## **I knew it was important that jurors hear my testimony on my terms without the usual courtroom tactics of objections and interruptions.**

It would take me years of courtroom trials and constant practice to finally gain some measure of control in the courtroom. The reason I needed to be in control was to have the opportunity to answer questions fully without interruption or objection. I knew it was important that jurors hear my testimony on my terms without the usual courtroom tactics of objections and interruptions. One of the remarkable things I learned about the OODA Loop was that I had actually been employing Boyd’s strategy without fully realizing it. I never knew that what I was doing in the courtroom even had a name. Without being aware of it, I had found a way to work within the attorney’s time frame. I began employing this strategy around 1984 and it would take a few additional years before I had perfected the strategy.

When I read about the OODA Loop I realized that what I had been doing in court originated from the military mind of Colonel Boyd’s work in the 1970s. Although not universally embraced by all branches of the military, there were many young officers who would adopt this strategy in future wars. The first Gulf war, Desert Storm incorporated this tactic to perfection. It was a 100 hour war that used a mock amphibious landing in Kuwait while a massive ground and air attack swept around and encircled the Iraqi Republican Guard from the rear. This maneuver was based on the concepts originated by Colonel John Boyd while he had been stationed at the Pentagon.

In order to have more control in the courtroom I devised several strategies that allowed me to survive and thrive in the courtroom. These strategies fit right in with Boyd’s OODA Loop. The acronym stands for Observe, Orient, Decide, and Act. It’s really a feedback loop due to the fact that every action provides new data that goes back to the Observer. Every action, every answer provides new information with which to monitor or measure the witness’s responses in the courtroom. In fact, the observer themselves is being observed which has a direct effect on how well they orient themselves to a changing environment as they give their testimony.

The observer here is the expert witness. How the expert is observed (viewed) by the jury is quite different than how the expert is viewed by opposing counsel or the DA and the judge. Each group has a different view and therefore the observer shows a slightly different side to each group in the courtroom. I have seen witnesses scowl at a defense attorney who asks a difficult question and then smile benevolently towards the jury with the answer. This same witness will show humility and deference to the court (judge) when needed and may show some irritation at a DA who cannot ask the right questions. I know that everyone aspires to maintain a neutral behavior in the courtroom. However, reality acts to thwart our best intentions. Therefore, the observer being observed affects how they view data entering the OODA Loop. Hence the person employing the Loop must constantly monitor how well they are performing. Data or information is constantly being fed back and it's critical to evaluate this information to stay on task. That is, to stay ahead of the adversary. Failure to do so can swing the advantage to the opponent.

For example, if a witness becomes upset or angry, thus providing an advantage to opposing counsel, then changing one's behavior to a more professional posture can shift the advantage back to the witness.

Here's another example: if I think some levity would be an important strategy to use in a trial and no one finds it funny, then I will avoid using it. I advocate the use of spontaneous humor when it's appropriate. However, if all I see are blank stares then I will change to a more formal demeanor. This is information (feedback loop) from the jury that tells me that I need to get back on track with them. Some juries love humor and respond favorably. Some don't and wouldn't laugh if Jay Leno was testifying.

Let me briefly describe the elements in the OODA Loop. I have not read nor heard Boyd's written or oral description of his loop. This is my best analysis of the information contained in the loop based on my courtroom experience.

Observation: Has three main elements:

- Outside Information (pretrial conference, case review, pretrial motions & research)
- Unfolding Circumstances (Type of Case: Homicide, Rape, DUI etc and Qualifications/Voir Dire)
- Unfolding Interaction w/ Environment (Responding to the courtroom process, judges rulings, attorney's questions and jurors signs of approval/disapproval)

Orient: Has five elements.

- Genetic Heritage (Introvert/extrovert, one's physical stature & intellect)
- Cultural Traditions (Eye contact, strength of voice, level of assertiveness)
- Previous Experiences (Number of times testified, familiarity with the legal system)
- Analysis & Synthesis (Monitoring the impact of one's testimony, relying on previously learned experiences, adapt-

ability and deploying new strategies & evaluating them)

- New Information (Reacting/responding to new information through Direct and Cross Examination, Responding to court rulings)

Decide: Decision (hypothesis) Question Assessment, Deployment of Strategy. Personal Conduct & Integrity, consistency in quality testimony.

Action: (Test) Responding to the question. Determining the pace of the answers, requesting clarification/rephrasing, Use of humor, the use of visual aids or demonstrative evidence.

Every question asked and answered provides feedback to the observer. And the process continues to repeat itself until such time the observer (expert witness) feels in control of their testimony. Failure to achieve control in the courtroom implies that the witness is ignoring feedback allowing opposing counsel to stay ahead of them.

I will discuss three of the six strategies I have employed enabling me to work within my opponent's time frame. Again, by knowing precisely the strengths and weaknesses of my opponent and his or her case. For example, my opponent may have a weak case and is grasping at straws. If he can produce some effect that can cast doubt on the State's case then he may improve his client's chances for an acquittal or a hung jury. Or, he may have an innocent client and is being extraordinarily kind and courteous wishing me to assist him with helpful answers. He may or may not be a very experienced litigator. As I mentioned earlier, I never made any conscious effort to describe my strategy while testifying. It was more a survival response than anything else. I've heard some people describe it as a flight or fight response. So the responses I chose, unconsciously, seemed like the right strategy based on events that occurred while testifying. Another way to look at it was that I was just responding favorably to the stimulus. Additionally, I continued to apply this strategy because I got the results I was looking for: control of my answers and the time to answer them. Deploying this strategy actually decreased my time on the witness stand as my level of control increased.

First: I made up a list of "What if they ask me . . . ?" types of questions. I had hundreds of questions listed from very personal to highly technical questions that I had a ready answer for. I checked these answers with colleagues and tested them in the courtroom on a regular basis. I knew that many of the questions I was asked over the years were designed to baffle me or make me pause or hesitate. During these moments the attorney had me at a disadvantage. He was now one step ahead of me. While he was waiting for me to answer he was getting ready to ask me another 'no win' question. By the time I had an answer that he found suitable there he was tossing yet another question to stump me. It doesn't take too many questions of this type to upset the rhythm an expert wishes to maintain during their testimony. Challenging and rapid fire questions can usually put an expert in a defensive position,

藝術

戰爭

## The Art of War



After about ten or eleven straight questions and getting a yes each time she looked up at me and exclaimed, “Why Mr. Davis you’re agreeing with every thing I’m asking you.” I replied, “Ms. I’m a very agreeable guy.” The sudden outburst of laughter in the courtroom so upset her she soon ended her cross examination.

Sun Tzu.

like a boxer on the ropes being punched senseless by a superior opponent. In our arena witnesses often find themselves being pummeled with questions.

By having answers to these hundreds of questions I was rarely caught off guard or stumped on the witness stand. By providing the answers as quickly as they were asked I never got behind the attorney’s power curve. This caused the attorney to work harder to find questions with which to challenge me. And the more questions they asked that I was able to answer quickly the better I looked. And there’s one thing opposing counsel loathes and that is to make the expert witness ‘look good in front of the jury.’

I have found in my own experience that extroverts tend to do much better when faced with challenging questions. I have met young criminalists in my courtroom classes who have never testified yet excelled on the witness stand to my utter amazement, answering questions with an ease normally seen with more experienced experts. They seemed to possess a special gene for handling themselves in tight situations. Introverts on the other hand want to mull over a question before answering it. They would prefer an attorney send in his or her questions ahead of time to give them time to consider the appropriate answers. That’s the reason why I never excelled at pop quizzes. I needed time to prepare and time to think about the possible answers. I always preferred to take the tests home and answer them at my leisure.

Second: Knowing the type of courtroom battle I was facing provided a tactical advantage. I would ask my attorney if my testimony was going to be contentious. That is, would it be vigorously challenged on cross examination? Perhaps my work had been independently reviewed or even retested and there would be a counter opinion at trial. Knowing what I was facing gave me the edge to anticipate my opponent’s moves. This is more than just being prepared. Going over my notes and making sure I had everything correct provided some advantage, and through experience learned that it wasn’t enough. I needed to know opposing counsel’s strategy on cross examination.

What I’m talking about is the difference between the strategies employed by Sun Tzu and von Clausewitz. Sun Tzu’s strategy was to unnerve or rattle the enemy force prior to battle causing them to lose command and control. Then attacking when they were disoriented and therefore most vulnerable. While von Clausewitz’s strategy was based on reacting to the enemy’s force and then pounding the hell out of them. I knew I didn’t have the intellectual fire power to verbally challenge opposing counsel. However, I knew I had the skills to play the game at their level perhaps even better. Having this edge provided me a great deal more control and comfort in the courtroom. Opposing counsel never knew that I prepared for each and every trial in this manner or with this intent.

Most experts just show up for trial and let the chips fall where they may. I made it a practice to know as much about opposing counsel’s case as I did my own. Getting case specific “intel” from the DA and from the investigating officer allowed me to stay a step or two ahead of my opponent. In fact, I relished the opportunity to speak to opposing counsel prior to trial when they called to discuss my work. This provided me with additional information with which to gauge my opponent’s strengths and weaknesses. This new information told me how well their “aircraft” performed.

On the other hand, there were many cases where my testimony was not going to be challenged. Although it felt as if I was getting the full treatment I already knew ahead of time the attorney’s trial strategy. So, I was able to maintain my composure while they ranted away. I didn’t take their attacks personally. I figured they were just making a good record and giving their client his money’s worth. In those types of cases I just relaxed knowing the attorney wasn’t trying to take my head off. I recall a famous trial attorney I met in Seattle who told me that he never had a client go to jail who had money. I asked him what happened after the client ran out of money. The lawyer said nothing. He just gave me a wink. I got his message. Once the money ran out, they went to jail.

Third: During contentious cross examination a good trial attorney can easily upset a witness by keeping them off their rhythm. Keeping them on the defensive – thus in effect, keeping them from becoming an effective witness against their client. A famous law school professor I met in 1996 once told me that keeping witnesses off balance was part of his trial strategy.

A method often employed can take on several forms. One is to ask short rapid questions requiring short answers. On cross examination the answer is contained within the question generally requiring a yes or no answer. Some examples: “You’re testifying on behalf of the prosecution, isn’t that correct?” or, “You’re a latent print examiner aren’t you?” or “Going to crime scenes is part of your regularly assigned duties, isn’t that true?” Again, these questions are designed to elicit just no or yes answers. And the jury can be left with a negative impression that the witness is just a puppet answering questions. This tactic is clearly designed (now that I’ve read about Boyd’s concept) to work inside the expert’s time frame. Opposing counsel clearly has the advantage. He is controlling the witness through the pace and the types of questions asked.

Sometimes, opposing counsel like to ask black and white questions. They require either a yes or no answers without any ambiguity. That practice may be acceptable in the courtroom, but life’s experiences just don’t work that way. There are few absolutes which require just a yes or no answer. So opposing counsel really doesn’t mind when a witness quibbles with

them. The witness can appear quarrelsome or argumentative to the attorney's delight. One way that I was able to get inside my opponent's time frame was to observe this behavior and not quibble with them.

I remember one trial I had in Seattle where opposing counsel was reading from a list of questions designed to 'trap' me. They had been prepared for her in advance of my testimony. She made no pretense of trying to look as if she had written these questions. She never looked at me as she read off each question. Every question was cleverly designed to elicit some quibbling from me. In another trial I probably would have qualified some of the questions. Sensing her strategy, I just answered each question with a firm yes. After about ten or eleven straight questions and getting a yes each time she looked up at me and exclaimed, "Why Mr. Davis you're agreeing with every thing I'm asking you." I replied, "Counselor, I'm a very agreeable guy." The sudden outburst of laughter in the courtroom so upset her she soon ended her cross examination.

The story above illustrates a major principle of Sun Tzu's philosophy. That is, defeating the opponent without actually engaging in battle. (4)

Another tactic I found that allowed me to get within my opponent's time frame was to help them. At least it appeared that way to everyone in the courtroom. I would often praise them for asking a well thought out question. Even going so far as to comment, "You've really stumped me with that question." Or "I've never heard that question before." "Counselor, that's a great question. I just wish I had a great answer." I found attorneys were caught by surprise with my comments. They weren't expecting a witness on cross examination to praise them. I also found ways to help them with their questions. If they couldn't pronounce the name of a particular instrument or the technology employed I would assist them with the correct pronunciation and help them understand the technology utilized in a particular case.

I know they have a very difficult job in the courtroom. And sometimes their questions are not well put or well thought out. So, I found that by helping them it appeared as if I was their witness. The result for me was that it felt more like direct examination. I found opposing counsel less likely to rip me apart when I was doing my best to make them look good in the courtroom. Over the years, I've had attorneys speak to me after a trial to thank me for being forthright with my answers. Of course that was not my sole objective. My objective was to stay a step or two ahead of them and avoid any kind of a counterstrike. And they never knew that my trial strategy was to maintain command and control in the courtroom.

Another tactic I found invaluable was to agree with the attorney seemingly at my peril. Here are some examples:

Q. "Mr. Davis, could you please go the board and write the structure for Heroin?"

A. "I'd love to counselor, but I don't commit these structures to memory. However, if it's important I can call my colleague at the lab and he can provide the answer for me."

Q. "Would you please read the highlighted portions of this technical article for the jury?"

A. "I would love to. May I have the opportunity to review the article first to insure that what I read will not mislead the jury?"

Here's another example of this concept. If someone asks me for \$100, I would tell them I would be delighted to give them \$100 if only I had the money. So my strategy is to answer yes followed by a no. This strategy sends a message to

everyone in the courtroom that I am going to comply with the attorney's every request. If I am unable to accommodate them I explain why I can't comply with their request with a smile. I leave opposing counsel with the impression that I am a fair witness who appears helpful on cross examination. The operative word here is 'appears.'

I have testified in excess of 1600 criminal and civil cases from Fairbanks, Alaska to Dallas, Texas. I worked many high profile cases where some were turned into books and two of them into films made for television. Many cases I worked appeared in the print media. Another case I worked appeared on a National TV program called "Inside Edition". I've even been on local television and spoken on the radio on many occasions. I worked many serious felony cases some involving several suspects and several victims and spanning several crime scenes. In my entire career I have never been on the witness stand longer than eight hours! And that happened just one time. I rarely had a trial where my testimony exceeded two hours. The point I'm making is that my trial strategies increased my enjoyment for testifying while reducing the amount of time I spent on the witness stand.

I believe my courtroom strategy, which I now define as the OODA Loop inspired by Colonel John Boyd was responsible for my success in the courtroom. I determined my success in terms of time on the witness stand and my overall enthusiasm for testifying. As I improved my skills I found myself looking forward to going to court and testifying. I enjoyed the thrust and parry of verbal combat in the courtroom. I always knew that no matter how skilled the attorney or how good his case I had the tools to stay one or two steps ahead of him. In fact, I hated getting calls not to come due to a stipulation. There was no better measure of my role in the criminal justice system than the opportunity to share my work with a jury and on my terms. I found it a privilege and an honor to testify.

In summary, the OODA Loop has a very real application for courtroom testimony. Commanding the attention of jurors and attorneys alike while maintaining control is a great asset for an expert witness. There is a tangible value inherent in Boyd's cycle. In order to effectively use this tool it is imperative that the witness be consciously competent during direct and cross examination. That requires the witness to constantly monitor the effect their answers and their behavior are having on jurors and attorneys alike. An additional step is to take one's courtroom experience and debrief with a colleague. Getting feedback even after a trial will facilitate the Observer (witness) the next time they go to court. Building upon one's and other's courtroom experiences provides a strong tactical advantage for future trials.

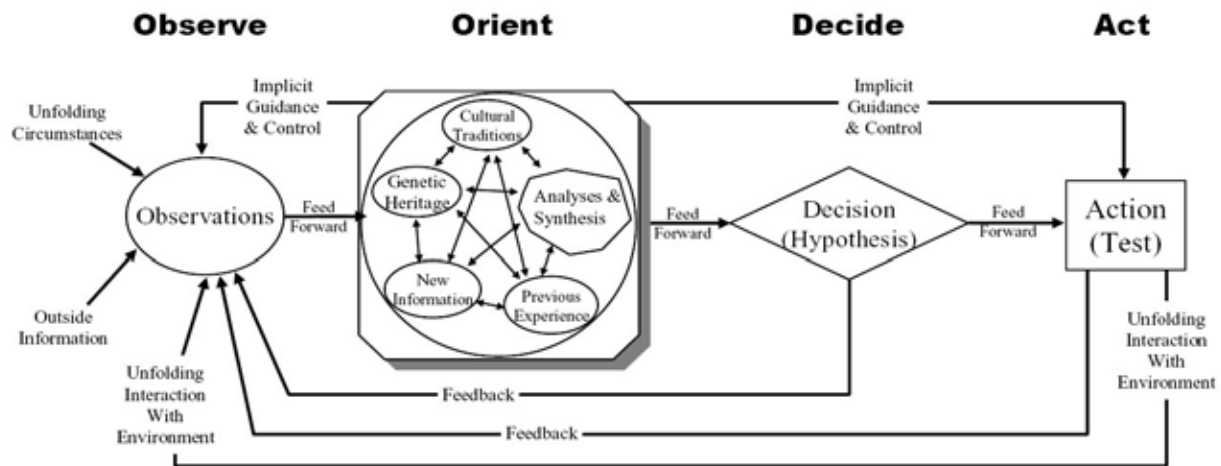
The strategies implied in the OODA Loop have been used in many other domains. In the corporate field, in the military and now in the courtroom. I have seen first hand the value of deploying this strategy. It has provided me the opportunity to enjoy going to court and testifying during a career filled with memorable highlights.

Finally, I know that many experienced experts will recognize their own strategies embodied in the OODA Loop. Unconsciously we have all employed techniques and strategies in the courtroom that have immeasurably benefited our time on the witness stand. I am grateful to Bob Blackledge for bringing this idea to my attention. The elements contained within the OODA Loop that were so well articulated by Colonel John Boyd continue to have far reaching consequences. I am only too delighted to share it with my colleagues.



# Boyd's OODA "Loop"

## Sketch



Note how orientation shapes observation, shapes decision, shapes action, and is in turn shaped by the feedback and other phenomena coming into our sensing or observing window.

Also note how the entire "loop" (not just orientation) is an ongoing many-sided implicit cross-referencing process of projection, empathy, correlation and rejection.

*From, "The Essence of Winning and Losing" by John R. Boyd, January, 1996*

Defense and the National Interest, <http://www.d-n-i.net>, 2001

## References

- (1) Robert Blackledge. Criminalist retired NCIS Regional Forensic Lab San Diego, CA. Personal correspondence.
- (2) Robert Coram. Author. Personal correspondence. "I like the piece you did. A sound tactical application of the OODA Loop."
- (3) Mary Ellen Boyd, Executrix for Colonel John Boyd. Permission to use the OODA Loop in this article.
- (4) "To win one hundred victories in one hundred battles is not the acme of skill. To subdue the enemy without fighting is the acme of skill." Sun Tzu

# ARRIVEDERCI, CHUCK MORTON



CAPPING A 40 YEAR CAREER IN FORENSIC SCIENCE, CHUCK MORTON retired this summer. With over twenty years as a crime laboratory director, his experience was a tapestry of laboratory administration, expert testimony, laboratory and field examination of physical evidence, crime scene processing, and crime scene reconstruction.

1964: The Beatles had just released *A Hard Day's Night*, and Chuck had just filed his application to become a provisional member of the CAC. Dues were 5\$, and fingerprint cards were required!

Within four short years, none other than Paul Kirk requested that Chuck be elevated to the status of full member. The membership agreed, and in only eight more years, the CAC would see Chuck as its president.

A celebratory dinner was held in his honor at Scott's Seafood in Oakland's Jack London Square. The turnout was excellent, and memories were served up with coffee and dessert by numerous friends and co-workers.

The sweetest news was saved for last: Chuck Morton has been voted to be the CAC's most recent "Life Member" and the announcement was greeted with cheers. No more dues, Chuck!

*Contributors to this article include Shannon Cavness and Keith Inman (photos).*





## Send in Your CAC Awards Nominations

### American Board of Criminalistics Examination Award

The American Board of Criminalistics is allowing each of its member organizations to choose one individual per year to take an ABC exam without a sitting fee. The CAC will pay the application fee. More information on the ABC exams is available at [www.criminalistics.com](http://www.criminalistics.com). If you wish to be considered for this award, please submit a completed application to the Awards Committee by December 1st.

#### *Award criteria:*

- 1) No nomination is required; the applicant applies directly to the Awards committee.
- 2) Any member of the CAC (Affiliate, Provisional, Full, Corresponding, or Life) is eligible
- 3) The application may be for any ABC exam (Technical Specialist, GKE, or Specialty)
- 4) The applicant must meet the minimum qualifications for taking an ABC exam
- 5) The first criteria is financial need (e.g. students, new employees, or employees without a tuition reimbursement program)
- 6) The second criteria is employer's educational requirements (e.g. employees are required to take an ABC exam, or get credit towards promotion if they are certified)
- 7) If more than one applicant meets qualifications 2 through 6 then the winner will be selected by random drawing. Applicants who do not meet the criteria for financial need or educational requirements will still be eligible if no other applicants did meet those criteria (and the winner would also be selected by random drawing).

### Ed Rhodes Award

This is to announce that applications are being accepted for the annual Edward F. Rhodes Memorial Award. Ed Rhodes was a long time criminalist nationally recognized for his trace evidence work, certification effort, and teaching ability.

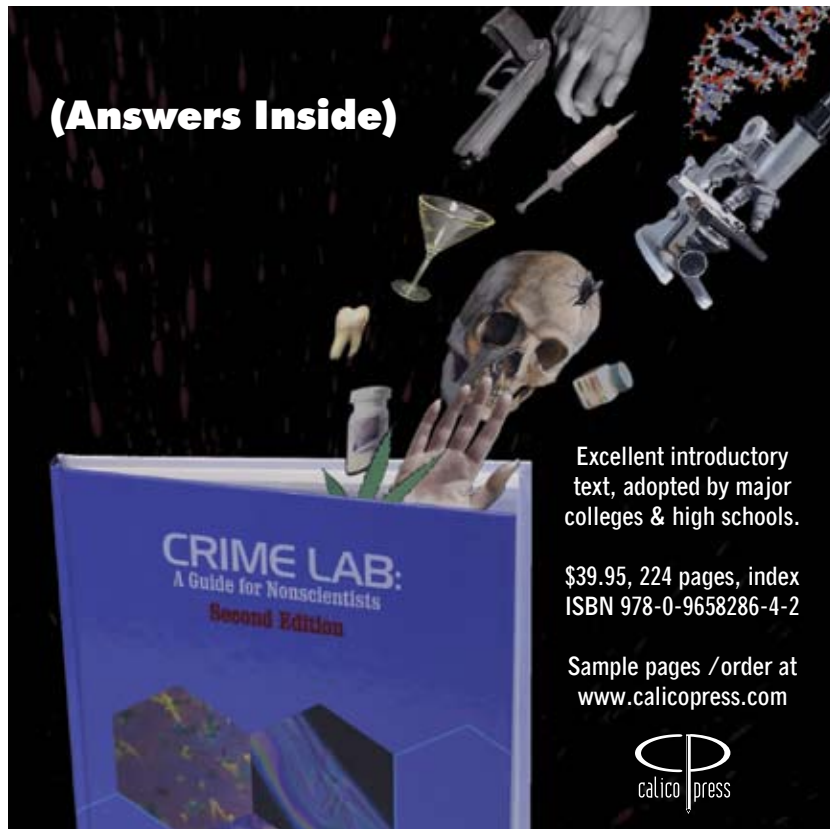
The purpose of this award is to give a CAC member who is preparing for a career in criminalistics or is newly employed (less than three years) in the field of criminalistics the opportunity to attend a major forensic or scientific meeting of benefit to forensic practitioners. Examples of forensic meetings 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 \$1000. 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.

Forms and more information can be found at <http://www.cacnews.org/archives.htm>

Please e-mail or fax your nomination to Mey Tann at [mey.tann@doj.ca.gov](mailto:mey.tann@doj.ca.gov) (951) 361-5010 by December 1st.




**(Answers Inside)**

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## CAC Regional Report

On August 10, 2006, the southern region of the CAC held a study group luncheon meeting. The trace evidence, DNA, and toxicology study groups met in the morning while the fire debris analysis, supervision and leadership, and a joint meeting of the forensic alcohol and controlled substances study groups met in the afternoon.

The toxicology section invited two hospice nurses to discuss the philosophy of hospice care, types of clients they see, and medications given. The information by the nurses provided a unique viewpoint into the world of hospice care.

The DNA section was well attended with a second room required to hold all 28 attendees. The topics included robotics and automation presented by Adam Dutra (SDPD) and Danielle Wieland (OCSD). The burglary grant program and whether a 13-locus match can be expected between two unrelated individuals was also discussed. Juli Buckenburger (OCSD) presented an interesting case of the greasy forehead.

For the trace group, Mariane Stam (DOJ-R) discussed the updated PDQ Paint program and use of FTIR and SEM-EDX results and there was a round table discussion also.

During lunchtime Sergeant Randy Sterett of the OCSD bomb squad was the luncheon speaker. He provided an excellent and timely discussion of terrorism, suicide bombers, and forensic preparedness. Included in the talk was information about bombings that have occurred internationally as well as locally. Randy discussed how to talk and deal with the real first responders, those civilians who happen to be in the area when the device exploded, who are trying to help to find survivors of the explosion and why people close to the explosion may not seem to be listening—they are deaf. He de-

scribed how Israel deals with suicide bombing scenes. Randy encouraged those present to develop a good relationship with their bomb squad to improve the information exchange and mutual support.

The supervision and leadership study group met for the first time and outlined the direction for future meetings. The group plans on meeting on days different from the future CAC study group meetings so more supervisors will be better able to attend.

At the arson study group, Bob Blackledge gave a talk about stable isotope ratio mass spectrometry, what it is, how it is done, and what causes stable isotope fractionation. Bob went on to discuss forensic science applications of this methodology including arson investigations, matches, and explosives.

A Drug Recognition Expert (DRE) and someone from the California Narcotics Officers Association spoke to the joint meeting of the forensic alcohol and the controlled substances/drug analysis sections. Both gave excellent presentations on drugs and driving and effects of drugs on people. Some of the most striking images were the "before and after" images of chronic methamphetamine abuse.

The exemplary abilities and talents of the following people must be recognized. They selflessly volunteered with a desire to make the CAC Study Group luncheon on August 10, 2006 very successful. Their desire was more than accomplished. Without the following individuals, the meeting would not have taken place. Thank you!! Felicia Gardner, Heidi Hunsicker, Richard Gustilo, Ashley Kowalski, Ron Moore, Michelle Stevens and Kenny Wong.

The next study group meeting is scheduled for November in San Diego. I hope to see you there!

*Wayne Moorehead*  
Regional Director, South



Ashley Kowalski Photos



## Seeing DeForest AND the Trees



*There are no such things as applied sciences, only applications of science.* —Louis Pasteur

On a bright sunny day in San Mateo we are privileged to convene with Dr. Peter De Forest, Professor of Criminalistics at the John Jay College of the City University of New York. He was here in the Bay Area to attend the retirement dinner the previous evening of another colleague and old friend, Chuck Morton. Our new 'POL' digs are at Astaria, a Mediterranean-themed restaurant in the lobby of the Benjamin Franklin Hotel. We've asked Peter if he would mind being "interviewed" for this column, and he graciously acceded to our request. After settling comfortably into the booth and deciding on lunch, we agree to a format for the interview. And that agreement is that there will be no format, just a Virginia Woolf-esque stream of questions, answers, and ideas that may or may not flow logically one to another. We are hoping for insights and anecdotes, and we get plenty of both.

### The current practice of forensic science

To get the discussion moving, we ask Peter what changes he would make in the way that forensic science is practiced in most laboratories. Without even a moment of hesitation, he responds with "Put more science in it; science should be involved in the front end of the case; specifically, at the crime scene." Clearly, this is a well-used soapbox. Criminalists, he insists, should participate in defining the problem(s) associated with the case, and if they cannot be at the scene, then they should be present when evidence comes into the laboratory to make an assessment of what might be involved with the case. This leads him to what he considers the current *root of the problem*: "Tests on items." If the item has blood, it goes to DNA; if it consists of a cartridge casing, it goes to firearms. In other words, the item determines the tests to be run, rather than the pertinent questions in the case. This leads, in his experience, to potential loss of information, and just as important, to unsubstantiated or inappropriate inferences.

To illustrate this point, he relates a story about a shooting case (he actually describes it as a Mafia hit). A man is shot in his car, and the car was a bloody mess. About a block away, a person is arrested in possession of a 6 shot Cobra, still in his pocket and warm. An examination of his clothing and the weapon reveals no traces of blood. The average lay person would look at all of the bloodspatter in the vehicle and expect the perpetrator to be a covered in blood. But a close examination of the car reveals two domains of blood: one on the door post and head rest, and the other much lower down. The former was indeed from forward and back spatter from the shot itself, but the latter much more extensive blood pattern

was formed by blood dripping into blood from the head of the deceased. This pattern would form long after the shooter had departed, and could in no way be expected to be present on the clothing or weapon of the perpetrator. Peter concludes the story by observing that 'tests on items,' in this case failing to reveal the presence of blood on the alleged shooter, does not explain the limitation of the finding. Inappropriate inferences will be drawn by lay people who cannot have the expertise to appreciate the significance of the evidence presented to them.

### Who interprets the physical evidence?

Keith observes that there appears to be a real disincentive coming from the law to practice forensic science in the way Peter suggests. He observes that some attorneys seem to prefer to have 'results from tests' so they can spin those results in the direction most useful to their case. Peter reminds us that while we can't invade the province of the jury in determining the ultimate issue, many scientific findings exist that require interpretation that a lay person cannot and should not do, whether juror or attorney. But there are also times when once the facts are extracted from the physical evidence by the criminalist and presented, the jurors can make the final decision. He has developed a style of testifying where he comes to a specific point, but then stops before drawing the final conclusion, if it is nothing more than common sense given the facts derived from the physical evidence. The example that he provides from his long career is that of a homicide of a police officer in an exclusive 10<sup>th</sup> floor Manhattan loft. A 30-something is afraid of losing his inheritance, and so decides to burglarize his father's house. As events unfold, he ends up binding his father's girlfriend with duct tape and dragging the father himself around the apartment by his ponytail. The female freed herself and called 911. The police were able to get into the lobby, but not into the elevator, so one officer manages to get into the stairwell and makes his way up toward the 10<sup>th</sup> floor. The suspect, realizing that someone is approaching, also gets into the stairwell, and fires on the police officer from above. One of the bullets penetrated the officer's back between his bulletproof vest and the collar of his uniform. The trajectory of the bullet included penetration of the lung, and the officer began coughing up blood. At trial, the defense contended that the officer shot first from level six while climbing the stairs, and the suspect was returning fire in self-defense. In reconstructing the crime scene, Peter could determine the trajectories of the officer's rounds, and they originated in the same location as that of the coughed-up blood from the officer. That showed that the officer was down

**Norah asks the next obvious question: does an unconscious aspect to bias exist? Peter answers in the affirmative, and believes that the way to guard against it is the bright light approach—vigorous and constant discussion.**

at that location at the time the pattern of coughed blood was produced at that location. Now, he tells the jury, I can't tell you which of these two sequences is true in this case, but you have all of the information that you require from the physical evidence to make your judgment. The interpretation of the trajectories and blood pattern is the subject of expert opinion and interpretation; the meaning of these findings to the case is the subject of the jury's deliberation.

One more case example lends yet another nuance to the idea of interpreting evidence. Peter is asked to examine, 20 years after the incident, evidence from a Chicago bank robbery in which a guard was fatally shot. Bullets and bullet fragments had been collected from the scene, along with a poor quality surveillance tape. The autopsy revealed that the guard had been shot in the chest and in the right upper arm. The prosecutor had been his own forensic interpreter, and concluded that the victim was shot first in the arm, and then fatally shot in the chest while on the ground. This was based on a still frame taken from the blurry surveillance tape showing the gunman standing over the guard with the gun pointed downward. Originally the weapons and bullets were collected and submitted to the local laboratory, who concluded that the bullets were fired from the defendant's gun. But Peter discovered that one bullet was almost in pristine condition, while the other was shattered. The defendant related that he struggled to disarm the guard, and accidentally shot him during the struggle. Feeling bad for the guard, he let him lie down on the floor, and while doing so the gun went off again. A check of the crime scene notes showed that the pristine bullet had been found on a typing table; it must have been slowed by something similar to a bullet tank. The only thing in the bank similar to that was the width of the guard's chest. The other destroyed bullet was shattered and it was determined that it must have made a direct impact with the carpet over a concrete slab. From autopsy photos Peter was able to determine that the chest wound lined up with the arm wound. It was apparent that both wounds were the result of a single shot, and that the shot to the carpet did not strike the guard. When the laboratory was asked to reconsider their examination, they simply repeated the original exam, and declared that the bullets were fired by the particular weapon. When asked why they would merely repeat an exam they had already performed, the reply was telling: *"We just do what we are asked to do."* Peter brings home his message; the role of the expert should be much greater than that; it must include assistance in defining the problem, suggesting which evidence and analyses will answer the problem, and providing an interpretation of the results that will aid everyone in understanding the meaning of the evidence in the context of the case.

**Does objective, unbiased criminalistics exist?**

The discussion then moves on to the topic of bias and objectivity. One of us refers to Saks and Koehler's editorial in *Science*, and Peter comments on their quote that all scientists are tempted to make a negative result positive. Peter responds that there is no basis for such a sweeping statement and no data exists to support it. His anecdotal experience often reveals the opposite. If some result exists about which they will feel uncomfortable about testifying, his experience is that they will back away from making a commitment in any direction. He remarks that (again most) analysts pride themselves in being able to resist the temptation of getting suckered into saying something that they don't believe. A recent example from Keith illustrates this point: a DNA analyst, with a 1 in a squillion number, insisted on saying that the individual was not excluded as the donor of the sample. When the DA, fairly innocently, asked a multipart question that implied the evidence actually came from the person, the analyst was quick to point out that she was NOT saying the sample came from the individual, merely that she could not exclude him as a potential source. Thus in spite of the blatant examples that tend to make headlines, many analysts take great pains to appear unbiased, sometimes to a fault.

Norah asks the next obvious question: does an unconscious aspect to bias exist? Peter answers in the affirmative, and believes that the way to guard against it is the bright light approach—vigorous and constant discussion. Our work is regularly influenced by the people to whom we speak, the accounts we read, and the evidence we see. Chuck Morton, when asked the previous evening at his retirement about guarding against bias and the role of the criminalist, responded that doing the science, and then educating the lay person about the event through science, overcomes the human desire to please other humans, as well as the human failing of being influenced by attorneys and detectives. In a reprise of a previous POL, Keith opines that bias creeps in through the way the question is asked and who asks it. If the DA asks of a witness, could this event happen in this way, the analyst likely answers yes. The analyst will usually not realize that the listener does not hear, it COULD be this way; typically, the lay listener hears, it DID happen this way. This obviously accrues to the advantage of the attorney asking this question. Peter insists that this should overcome through education, training, and experience, and the learning curve in these situations can be shortened by having a good scientific environment where these topics are discussed openly. When he is asked this type of question, his response is that's only one of several possibilities. But Keith persists, and indicates that in his experience it is rare for an analyst to respond in that way. And it is less, rather than more, likely that the other attorney will frame an alternate question that would elicit the same answer from the

analyst. Peter immediately responds in favor of a more proactive role by the expert. A typical analyst response is, 'Well, if you asked me the right question, you would have gotten the other answer'. Peter believes this is totally wrong, and irresponsible on the part of the analyst. While we have a limited role to play in the criminal justice system, the role DOES include an obligation to ensure that multiple interpretations of the evidence are presented.

### How do we improve?

So Keith asks Peter; *What should every criminalist know, know how to do, or should do to broaden their perspective?* He replies that he has written and lectured extensively on the subject, but Keith, being mostly lazy, counters that he'd rather not do any research, and encourages Peter to just say it again, Sam. So he unleashes a string of ideas.

- Attendance at *crime scenes* is important; either at the one for the extant case, or having been at several. Analysts are better at the bench when they've been to the scene, and better at the scene when they've been at the bench.

- Having training that includes *rotating through the lab* to acquire a broad knowledge of a wide variety of types of physical evidence.

- Seek and attain certification, which causes analysts to read broadly. Norah adds that the best thing she ever did was study for the generalist certification exam.

- Learn how to *formulate a question and design an experiment to answer it*. The lack of scientific training and of a scientific attitude in forensic scientists is most easily appreciated by seeing how poorly this is done in most forensic laboratories. Norah suggests that a sub-section of this particular problem is the difficulty most criminalists (actually most people) have in framing assumptions. She relates the contents of a paper delivered in Helsinki by Jim Frazier, who suggests that, like it or not, forensic scientists not only do, but must use *imagination* in framing questions and outlining assumptions.

- Finally, Peter suggests a provocative idea that is quietly supported in several jurisdictions, *encouraging analysts to consult outside of their laboratory's jurisdiction*. By definition, this is almost always for the defense, and thus forces the criminalist to approach the case from another point of view and consider alternative hypotheses. By helping them see how a case rests on the questions being asked and the assumptions being made by the various players, their own casework becomes more thoughtful, objective, and grounded in science. It also provides a change in routine, and a little extra income. More fundamentally, allowing the defense community access to trained criminalists would provide a much-needed resource to the criminal justice community that is currently not available. It could at least dilute, if not eliminate, the "hired guns" and would be a good first step toward extending standards to cover all experts, not just prosecution experts.

A look at the iPod, used to record this session, reveals that we have been talking for 50 minutes. Dessert, we see, has been finished as well. We decide that this is enough 'Peter' for the current installment of the *Proceedings*. We thank Peter and wish him well on his future journeys. And Norah and I decide that Astaria will continue to be the new 'office' for future lunches from which spring these proceedings.

# UP & Coming

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## President's Desk, cont'd

(E) clearly indicated a situation (S) existed with the start of casework without review and approval of the completed training. Again, the QAM should have gone to that supervisor and talked (GT) it over before prematurely deciding what the situation was and reacting to what may or may not have been the case.

### Additional Dangers of Emails

Emails have even more danger and traps to befall the receiver. We tend to inject our own inflection onto the words we see and hear in our mind as we read. *Thanks* can be said with a straight up happy face intonation or it can be said with a downtrodden sarcastic smirk. Which is it? It depends on the context. But emails deprive us of the benefit of seeing the person's face and hearing their voice. The messenger cannot see our facial reactions to know that they might have missed something important.

What happens when we don't get an email response? Don't we feel like we have been blown off? There may be plenty of justifications, such as the person being gone on vacation, a business trip, or perhaps the person is strapped with a high profile case and just cannot get to emails for awhile. Again, we tend to project our own filters on the situation and those filters tend to be pessimistic.

In my own case, my reliance on internal email and voice mail has become even greater because I am physically separated from the rest of the lab by floor level. It has become so easy to see an email and just shoot off an instant reply.

I now have this equation hanging right above my computer monitor to remind me the importance of getting up and going to talk face to face.

Do not get trapped by speed or convenience. You will fall prey to imposed bias and filters and create what may be a totally unnecessary, unpleasant secondary situation.

*John Simms*



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## Guest Opinion

### Consider I.R.M.S.

Forensic science applications of stable isotope ratio mass spectrometry (IRMS) is an area in which I've recently developed an interest. Yesterday I received my copy of the Jan-Mar 2006 issue of *Science & Justice*. An article starting on page 15, "The use of indigo derivatives to dye denim material", caught my interest. I knew that in the past cotton fibers from blue denim were considered to usually have negligible evidential value because 1) they were so ubiquitous; 2) there was very little discrimination between them. I wondered if this was changing? The authors primarily used UV/Visible microspectrophotometry to examine blue cotton fibers from various sources. The conclusions of this article assured me that it wasn't. Under Conclusions on page 24 the authors state: "To sum up, it can be stated that approximately 95% of all the denim materials examined was made of 100% cotton and displayed the dye spectrum typical of Vat Blue 1 (indigo = CI 73000."

So, considering the popularity of blue denim fabrics, it would seem that lots of potential fiber evidence is still being virtually ignored. It would be quite significant if a method having high discrimination for different sources of blue cotton fibers (from denim) could be found. Naturally, I mused if it might be possible to use IRMS.

Before looking like a total idiot, I decided that I had better try to educate myself about indigo. I found that although indigo has been around for a long time and used to be derived from plant materials (natural indigo), today the denim industry almost exclusively uses synthetic indigo. However, they are chemically the same. I also found that as of a couple years ago there is no longer any US manufacturer of synthetic indigo. However, there are numerous manufacturers in China as well as manufacturers in South Korea, India, Mexico, and Germany. I also found that there were at least two possible synthetic routes for making indigo. So far at least, I could find no reason why indigo from different sources might not show varying isotopic ratios of  $^1\text{H}/^2\text{D}$ ;  $^{13}\text{C}/^{12}\text{C}$ ;  $^{18}\text{O}/^{16}\text{O}$ ;  $^{15}\text{N}/^{14}\text{N}$ .

Of course, lots of questions remain: 1) Is it possible to successfully extract indigo from a denim fiber? [Extraction would not have to be quantitative since we are not asking "how much"?] 2) Assuming that we can extract the indigo, what's the minimum length of fiber we would need in order to get reproducible results with IRMS? 3) If we were successful in leaping over the above two hurdles, would IRMS also show dye lot to dye lot variations from the same manufacturer?

Anyhow, considering its potential impact on forensic science, I feel that unless there is some obvious reason why IRMS of indigo extracted from cotton fibers couldn't possibly work, we should give it a try. To any nay sayers I offer my two favorite quotes: 1) I think it was Thomas Edison who said: "Most people fail to recognize opportunity when it comes because it is disguised in the form of work." 2) Sir Winston Churchill: "A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty."

*Bob Blackledge*

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## No Mistaking These Quotes

The greatest mistake you can make in life is to be continually fearing you will make one. ~Elbert Hubbard, The Note Book, 1927

Mistakes are part of the dues one pays for a full life. ~Sophia Loren

It was when I found out I could make mistakes that I knew I was on to something. ~Ornette Coleman

I never make stupid mistakes. Only very, very clever ones. ~John Peel

Never say, "oops." Always say, "Ah, interesting." ~Author Unknown

If you don't make mistakes, you're not working on hard enough problems. And that's a big mistake. ~F. Wikek

While one person hesitates because he feels inferior, the other is busy making mistakes and becoming superior. ~Henry C. Link

An expert is a man who has made all the mistakes which can be made in a very narrow field. ~Niels Bohr

That's not serious; it's just human. ~Jerry Kopke

A man should never be ashamed to own he has been in the wrong, which is but saying... that he is wiser today than he was yesterday. ~Alexander Pope, in Swift, Miscellanies

The only real mistake is the one from which we learn nothing. ~John Powell

The man who makes no mistakes does not usually make anything. ~Edward Phelps

Making mistakes simply means you are learning faster. ~Weston H. Agor

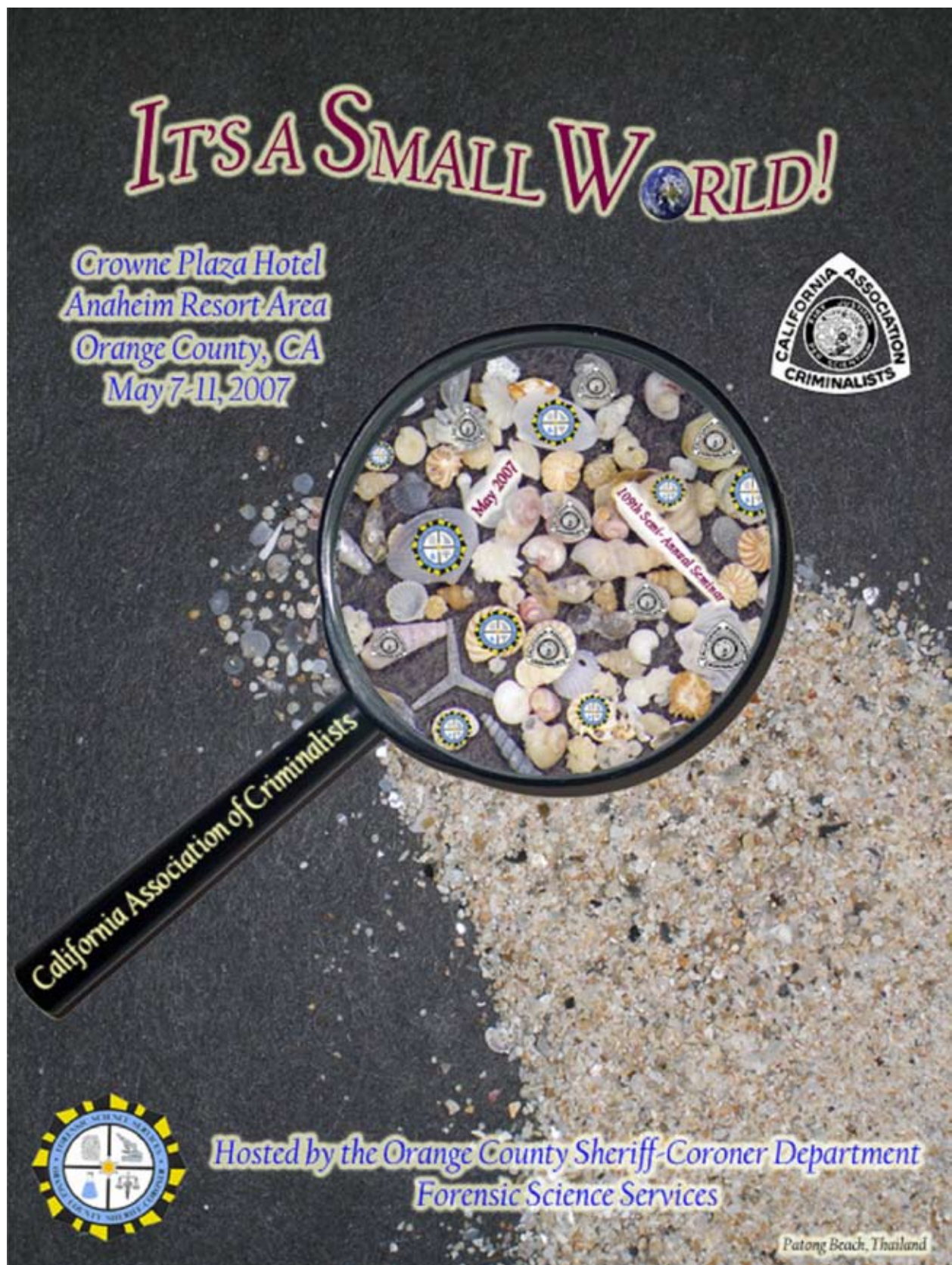
If a mistake is not a stepping stone, it is a mistake. ~Eli Siegel

One cannot too soon forget his errors and misdemeanors; for to dwell upon them is to add to the offense. ~Henry David Thoreau

You will do foolish things, but do them with enthusiasm. ~Colette



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