

## President's Desk

#### vincent VILLENA



CAC President

Another change
I would like to
implement involves
the expansion of the
Publication Committee
to include a Social
Media Specialist and
new webmasters.

#### Revisiting...for the Future

Ifeel compelled to begin this message by expressing my gratitude to the membership for putting me in a position to which I can hopefully make a positive difference to our organization. Even though I reside out of state, I proudly consider myself a Californian. The California Association of Criminalists is the first professional organization to which I belonged and, rightfully so, I have become most involved in and attached to.

I first started as an intern at Santa Clara Crime Lab and I tried to absorb everything I could learn as a student. I was eventually employed by Kern County Crime Lab assigned in the toxicology unit. There, I first truly felt like a scientist. I learned to analyze bodily fluids in various matrices for drugs and eventually testified as an expert witness. The CAC Code of Ethics, in Sec. IIIA, defines an expert witness as, one who has substantially greater knowledge of a given subject or science than has the average person. I feel that this concept begins at school. With proper education and with the avenues the CAC can provide, young aspiring students can become forensic scientists and can make this objective happen. This is why I decided to implement the formation of an Education Committee. This committee will bridge our organization with universities around the state offering a forensic science program. This committee will communicate with the universities' program chairs in forensic science and inform them of the assistance we can provide to their young aspiring forensic scientists. As much as I would like to take credit for this innovation, this committee is nothing new to the organization. I am merely revisiting a committee that was once formed in 1971 by then President George Roche. The committee was headed by Robert Cranston and included Charles Morton and Bryan Parker as members. The functions of the 1971 Education Committee were as follows:

- 1) Collect and compile information on colleges and universities offering criminalistics majors or courses in criminalistics such as
  - a. bulletins and course catalogues giving course descriptions,
  - b. major requirements units, outside courses etc.,
  - c. professional biographies of primary instructors.
- 2) Evaluate programs by
  - a. interviews with graduates (formal or otherwise),
  - b. comments and evaluations of employers of graduates.
- Survey laboratory directors and other criminalists, including recent graduates, as to what they want to see included in the program.
- 4) Establish and maintain communications with the schools to keep abreast of current developments and so that the schools will know what the field expects.
- 5) Report or publish to the CAC summaries and evaluations of the schools and programs.
- 6) Continuing education.

Members of the committee will be recruited and a more detailed adaptation and revision of the committee's functions will be authored by me and the appointed committee chair.

Another change I would like to implement involves the expansion of the Publication Committee to include a Social Media Specialist and new

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Submissions should be made in the form of Windows compatible files on CD or by e-mail. Alternatively, text files may be saved as plain ASCII files without formatting codes, e.g. bold, italic, etc. 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 September 1.



#### THIRD QUARTER 2017



#### Double Casting Workshop Susan Molloy watches as Peter Murphy carefully prepares resin for a cartridge case mold. More photos from the seminar inside this issue.

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## **EACBITS**







The 2017 spring seminar in San Francisco, hosted by the SFPD lab included a few honorable mentions. Above is our new CAC Board of Directors (missing President Elect Mey Tann). (l-r) Recording Secretary Gunter Scharnhorst, President Vincent Villena, Editorial Secretary Meiling Robinson, Immediate Past President Brooke Barloewen, Treasurer Helena Wong, Membership Secretary Megan Caulder, Regional Director North Cindy Anzalone and Regional Director South Jamie Daughetee.

At left is Mary Gibbons, recently retired from Oakland PD and Gary Sims, recently of Cal DOJ, both of whom received CAC Life Member awards.

Below left is President Brook Barloewen with John DeHaan who presented the CAC Founders lecture to open the seminar.

Below right Laura Silva (1) poses with author (and Sac State professor) Ruth Ballard who donated a copy of her recently published book, "Mateo and the Gift of Presence" as a door prize—won by Laura.





















(top 1) Jay Vargas receives the Al Biasotti Most Outstanding Presentation Award, (top r) Vincent Villena receives a Service Award for his tenure on the Awards Committee. (2nd row, 1) Meg Aceves receives a Service Award for her work on the ABC Certification Committee. (2nd row, r) Helena Wong receives the Paul Kirk President's Award for 2016. (3rd row) Yvette De La Torre receives the Ed Rhodes III Memorial Award for 2016. (Above) The passing of the CAC coconut from outgoing President Brooke Barloewen to incoming President Vincent Villena.

#### **OSAC Vacancies**

NIST's Organization of Scientific Area Committees (OSAC), the 568-member group working to develop a uniform set of forensic science standards and guidelines, is seeking to fill vacancies on its boards and committees. Vacancies will be available because a number of memberships with three-year terms expire this October. If the current member is interested in seeking a second term, they will be considered for the vacancy along with all other applicants who express interest in serving. Those who are interested and have not previously applied must submit an application in order to be eligible. Complete the online application form. https://www.nist.gov/osac-application-form

Applications submitted by June 30, 2017, will be considered for the positions opening in October. All applications will be kept on file for future vacancies and affiliate roles. If you have already submitted an application previously, you do not have to submit a new one unless your contact information or other answers have changed since your original application.

#### **New McCrone Courses This Summer**

Scanning Electron Microscopy at McCrone Research Institute, Chicago, August 21 - 25, 2017

McCrone's Scanning Electron Microscopy (SEM) and X-ray Microanalysis course will prepare students to successfully handle the imaging and compositional analysis requirements of nearly any material, e.g. metals, polymers, minerals, forensic trace evidence, pharmaceuticals, etc. Techniques are presented for analyzing insulating beam-sensitive or vacuum-sensitive samples.

Learn more and register online. Visit www.mcri.org for full descriptions of all courses, secure online registration, hotel information, and more.

Applied Polarized Light Microscopy (PLM) / Forensic Microscopy -- July 17-21.

Advanced Asbestos Identification -- July 17-21.

Fluorescence Microscopy Course at McCrone Research Institute, Chicago, August 22 - 24, 2017.

McCrone's Fluorescence Microscopy course, taught by Steven Ruzin, Ph.D, will cover the techniques of fluorescence microscopy used in the identification of microbes in the environment, and biological and non-biological samples.

The course consists of lectures, demonstrations, and hands-on training in the practice of sample collection, preparation, and observation using fluorescence microscopy techniques. After completing this course, students will have gained experience in designing fluorescence microscopy protocols and in implementing those protocols for investigating laboratory and real-world field samples.

Asbestos Fiber Counting [NIOSH 582] -- July 10-14. Advanced Asbestos Identification -- July 17-21.

Applied Polarized Light Microscopy (PLM) / Forensic Microscopy -- July 17 - 21.

Chemical Microscopy at Cornell University -- July 31-August 4

Sample Preparation and Manipulation for Microanalysis -- July 31-August 4.

#### meiling ROBINSON



CAC Editorial Secretary

I read articles written
by those I never knew
and most of whom I will
never know, but through
the CACNews I'm gifted
a glimpse of who they
were and what was
important to them.

### Dear Friends,

fter serving two years as editorial secretary, I find Imyself wondering how I'm going to make something old seem new again. How can I possibly find more words to put to page? Not just words, but words that carry meaning or words worth reading. In this dynamic field of incredibly intelligent individuals, it can be challenging to find engaging topics. I also find it difficult to illicit responses from our membership. I realize, perhaps, that we need to rediscover the CACNews together. The CACNews archives are a part of the living legacy bestowed on our membership. I see many faces in pictures, the names of so many members past and present. I read articles written by those I never knew and most of whom I will never know, but through the CACNews I'm gifted a glimpse of who they were and what was important to them. I read their thoughts, their ideas, their concerns and their hopes for our field, and I feel connected to them somehow. Their voices immortalized in print, resounding through time. When I joined the CAC, one debate centered on the Board's scrutiny of "provisional membership" applicants in context of the new "specialist era" that was arising from a field strongly rooted in "generalist" ideology. Ron Nichols was editorial secretary, and I never had to guess how or what the Giants were doing, ever. The CAC was also responding to both the American Bar Association Ad Hoc Innocence Committee regarding Forensic Evidence issues, and the 2004 Report to Congress by the National Institute of Justice regarding the Status and Needs of Forensic Science Service Providers. The California Commission's focus was on topics impacting California at that time, specifically how to reduce the backlog of untested DNA samples taken from convicted felons pursuant to Proposition 69, whether labs should adhere to a statewide standard, and whether criminalists should hold individual certifications. Sound familiar?

#### Everything old is new again

The CACNews archive is sometimes like looking into a mirror. Many of the issues that criminalists were concerned about 10 years ago are the very same ones we're facing today. There have always been backlogs to tackle, from Prop 69 buccal swabs, to sexual assault evidence kits, to NIBIN entries. Backlogs are not something that politicians and advocacy groups just wish into existence, they merely shine a light on a deficiency or limitation somewhere in the inefficient system that we're apart of. Backlogs will, therefore, inevitably continue to exist until we get better at resolving workflow issues related to turn around time. The sentiment regarding certification has gone from reluctance and resistance to one of acceptance, with currently over 1,000 ABC certificate holders. By no means is that an astronomic number but it's not insignificant either. The current iteration of statewide standards and individual certification is the OSACs development of national standards. It doesn't seem encouraging to know that we're basically going in the same old circles, only in new shoes. However, it does remind us that there will always be opportunities to make improvements, there's always another chance to learn from our past if we allow it to guide and inform our future.

In this upcoming term I'm hoping to invigorate and create engagement with the CACNews. I've devised one way to accomplish this, by creating a new series of interviews with CAC members. Taking some inspiration from the past, I am hoping to develop this interview series to include a sort of confession album called "Vintage Amusements: Confessions of a Criminalist." Confession albums were a very popular novelty by the late nineteenth century. These albums were similar to autograph books except instead of blank pages there were sets of questions intended to reveal a person's true character. In 1886 Marcel Proust filled out his first questionnaire in a book belonging to his friend Antoinette Faure. Perhaps due to the interest in and popularity of his responses, these types of questionnaires later became known as the "Proust Questionnaire." More information about the Proust Questionnaire here.\* Modern adaptations of this personality questionnaire include interviews by French TV host Bernard Pivot and James Lipton's Inside the Actor's Studio. The only caveat to develop this album is, of course, questionnaire subjects. So friends, I ask for your participation. Do check your emails, because I may be contacting you in the near future to collect your responses. And please, read all the fascinating interviews in the upcoming edition of the CACNews.

Cheers!

Mei

PS: Along with Hillary Clinton and Beyoncé, <u>CRISPR</u> made Time Magazine's 2016 Person of the Year Short List \*\*

Everything old does seem new again, except I am very dissimilar to the previously mentioned former Editorial Secretary Ron Nichols. The only similarity would be that my husband is also from Buffalo and a Sabres fan. But I still never wonder about the Giants, not because I follow, but because GO DODGERS!

PPS: Good news everyone! The Publications Committee is seeking new members! We're currently seeking two highly motivated and tech savvy CAC members to join and train to become the Webmasters. We're also seeking a CAC member interested in our new social media position called Social Media Specialist. If interested in either committee positions as Webmaster Trainee or Social Media Specialist, please contact me at editor@cacnews.org for more information.

[for the print edition of the newsletter]

\* http://www.newyorker.com/books/page-turner/how-the-proust-questionnaire-went-from-literary-curio-to-prestige-personality-quiz

\*\* http://time.com/time-person-of-the-year-2016-crispr-runner-up/

#### FEEDBACK -----

#### Trod On!

As I pass through the twilight of my 36-year career as a Forensic Scientist, and look forward to the next chapter in my life, I've been spending a bit of time reminiscing. From my early days at the LAPD Crime Lab to my current job with the San Mateo County Sheriff's Office Forensic Lab, I've worked alongside many talented and superb scientists, and developed some wonderful relationships. I've seen marvelous technological advances and cultural changes influence our industry. At this moment, I'm thinking of a group of our colleagues who work tirelessly, and without the accolades showered upon their peers working in other disciplines. They perform casework generated from crimes that often overload our criminal justice system. I want to recognize and acknowledge all those who work, or have worked, in the areas of controlled substances identification and blood / breath alcohol testing for their contributions to our profession and society.

When I began my career in 1982 my first assignment at the LAPD Crime Lab was in the narcotics group. I was greeted by my new colleagues who laughingly welcomed me as another "narco mule." I didn't know what that meant, however quickly found out. Those engaged in this type of high volume, quick turnaround time work, act just as a team of mules, trudging along without much recognition, doing their work day-by-day, making a difference. The same applies to those engaged in blood and breath alcohol testing, another high-volume discipline. Both groups are often presented with short deadlines to complete their work, and in some cases, give testimony that is as challenging, if not more so, than their other technical counterparts. Their work isn't highlighted in the many popular CSI / Forensic Science TV shows. Their work is mostly hidden from the public eye, however it's no less important.

To my colleagues who have served your respective laboratories in these capacities, your good work and efforts haven't gone unnoticed or unappreciated, especially by your many judicial and law enforcement clients: Trod on. Job well done!

With a perspective,

Bill Lewellen

#### **Morris Grodsky Remembered**

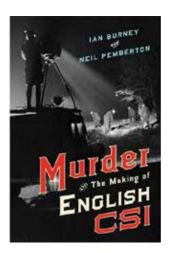
Morris dedicated much of his life to training and instilling a love for forensics in his students. He was both a mentor and friend to all his students. He had a great sense of humor as evidenced by a book of forensic cartoons he and one of the Columbians put together.

Patricia Huck

#### Steal This Book! (then burn it)

#### **Book Review by Bob Blackledge**

Of course the above is meant as humor (and as a blatant theft of Abbie Hoffman's book title). I would never suggest the commission of a crime, and certainly not in an auspicious



publication dedicated to crime detection and investigation. But the heading does neatly capsulate my estimation of the book, *Murder and the Making of English CSI*, by Ian Burney and Neil Pemberton (2016).

I was intrigued when a review stated that the authors had used as background two celebrated and complex homicide cases to show how crime scene investigation (CSI) had evolved from the early eighteen hundreds into the present day and yet retaining its fundamental principles despite advancing technology.

I thought a review might be useful to *CACNews* readers. The book was too new to be available at my local library, so I purchased a copy through Amazon. The book was such an abomination that I would have stopped reading after the first few pages except I felt it would be unethical to write a bad review without reading it all.

I did not know either author, so I went online to learn about their background. I suspect that Burney is the alpha male of the two and that it's his desire to "impress rather than communicate" that makes the book so objectionable. Twice they use the term, "fin-de-siècle" (bottom page 11 & bottom page 14). What a pretentious ass! Yes, I had to Google it to realize that they were referring to crime scene investigation as practiced around the turn of the century. In the middle of page 11 and elsewhere they have "synoptic role"! To illustrate its absurdity, imagine Jack Webb (Sgt. Joe Friday) using that term in the old TV series *Dragnet*!

I suspect that Burney foisted his writing style in the Introduction and in The Origins of Crime Scene Investigations, and then let Pemberton write the remaining chapters (whose style is not nearly as condescending). But consider this; these remaining chapters are liberally sprinkled with English translations of sections from Hans Gross's 900 page, "Handbuch für Untersuchungsrichter, Polizeibeamte, Gendarmen", and vet in every case the English translation is clearer, more succinct, and more enjoyable to read than the authors' commentaries that follow. As an example, near the top of page 12 the authors quote the first line of Gross's Handbook: "The aim of this book is to be as practical as possible." Contrast that with the authors' prose style on the middle of page 17: "Gross's engagement with the problems of perception, then, is a logical and operational prerequisite for the crime scene's epistemic status as a field of latent, objective material traces that can be utilized as such for the purposes of investigation." Are you kidding me? "The crime scene's epistemic status"? I even Googled the expression and the amalgam I came away with was, "Is how I perceive this crime scene correct, or is it just a Fig Newton of my imagination?" It's clear that the authors' intended audience is that small coterie of fellow historians who

like them are living out their lives of quiet desperation in the dreary, dusty halls of academia.

I must admit this book taught me one thing. I've never tried to write a book, let alone find a publisher for my manuscript. But I have several friends who have, and I know it's very difficult for an unpublished author to find a publisher. Under a capitalist economy, publishers will go out of business if their books don't sell. So if I ever do come up with a manuscript, I now know I must find a coauthor from academe and that under his/her institution's quasi-socialistic economy, their university press won't worry about the book's marketability.

If I seem angry it's because these authors have totally wasted a great idea. They could have used two complex historical homicide investigations as a backdrop, and in an interesting and understandable way, illustrated the thinking back in the early eighteen hundreds as far as the approach to crime scene investigation and shown how despite advancing technology, the fundamental principles still apply today.

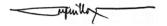
Depending upon the chosen format, the book could have been a *New York Times* best seller, richly supplanted with illustrations and diagrams and likely to be found on the coffee tables in many living rooms across the world. Or if written for the CSI practitioner it could have become an essential reference.

As it is, it is worse than useless. How so? There have been many well-written books that have inspired young people to go into various fields. The Hardy Boys and the Nancy Drew series, and the Sherlock Holmes mysteries have inspired many a budding young detective or criminalist. I was especially inspired by June Goodfield's *An Imagined World – A Story of Scientific Discovery*. And for a combination of inspiration and humor, *Lab Girl* by Hope Jahren tops my list. I just hope not very many budding criminalists are turned away by *Murder and the Making of English CSI*.

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webmasters. The current webmasters have had tremendous contributions, not just to our website, but also to many behindthe-scenes roles in the day-to-day operations of the organization. We are eternally grateful. The chair of the Publication Committee, the Editorial Secretary, and I are actively recruiting members for these positions. We would like to implore you to get more involved in the organization and participate in recently developed positions or positions requiring replacements. Just as the San Francisco Police Department Criminalistics Laboratory's seminar was successful, I would like the organization as a whole to be successful in every aspect of its functions. As your president, I aspire to see all of you honored with various awards, and many of you bestowed the title of Life Members, just as Mary Gibbons and Gary Simms did at the last seminar banquet. Just as I stated in my candidacy for presidency, I would like to reach out to the newer, younger forensic scientists who will be paving the way for the next generation of criminalistics. Get educated, get involved.





Morris Grodsky 1922—2017

CAC Life Member Morris Grodsky passed away on April 4, 2017 at the age of 94.

Morris played an important role in the early development of criminalistics laboratories in California and then in South America.

He was born in Denver, Colo., on May 19, 1922. After graduating from high school, he enrolled in the Civilian Conservation Corps (CCC) and later enlisted in the Army during World War II as a surgical technician.

After the war, he studied with Paul Kirk at the University of California at Berkeley receiving an AB in criminalistic studies. Subsequently, he received a master's degree in education at San Francisco State College. He taught science and mathematics in the San Francisco school system and taught criminalistics at the City College of San Francisco.



While a graduate student in 1951, he co-authored a paper with Paul Kirk and Keith Wright that evaluated various blood screening tests.

He was San Mateo County Sheriff's first criminalist, working on many noteworthy cases including the murder of Officer Eugene Doran, the full account of which was published in this newsletter. ["Bridge 35-199," CACNews 2nd Q 2008.]

He left the crime lab in 1962 to pursue an international career, being replaced by CAC Co-founding Member Don M. Harding.

Morris then joined the Aid for International Development (USAID.) Four years of this time was spent in Brazil (photo), where he helped develop the National Institute of Criminalistics. Eight more years were spent at the International Police Academy in Washington, D.C. In 1975, he joined the Treasury Department and arrived at the Federal Law Enforcement Training Center (FLETC), with the first group from Washington, D.C. He served as a group supervisor and as the forensic science specialist for FLETC.

Morris authored several articles which appeared in the *CACNews*, notably: "Contemplation on a Platter" (*CACNews 3rd Q 2001*), "The Luck Factor" (*CACNews 1st Q 2002*), and "Thoughts on an Old Bandanna" (*CACNews 4th Q 2009*).

Morris was named CAC Life Member in 2007.

In his autobiography, "The Home Boy's Odyssey," (1st Books, 2004) he relates many of his most memorable cases, many of which had an unexpected turn solved through patient physical examination and cool logic. An excerpt is presented below:

#### The Devil's Slide Affair

One of the most dramatic cases in my experience involving this type of luck happened many years ago on a winding coastal highway south of San Francisco at a place called Devil's Slide.

The case had its beginnings in an ordinary missing persons call. A man in his mid forties had not reported for work, had not communicated with his mother and seemed to have lost contact with all of his routine associations.

There was a normal follow up investigation which disclosed no indications of violence or foul play. Perhaps the man would turn up in a week or two. He lived a somewhat solitary life and did have a previous history of attempted suicide. At that moment, however, this was simply a missing person report.

The next time we heard anything related to our missing person was about 6 to 8 weeks later. Local police in Oregon had picked up a small gang of youths from San Francisco. These people, petty thieves and street hustlers, had committed some minor felony and were all in custody. The gang had been traveling in a vehicle which was identified as the property of our missing person. In consideration of the possibility that the vehicle had been stolen and transported across a state line, a federal violation, the local FBI agent was informed, and our department also received notification of these events.

Morris Grodsky meets with Brazilian authorities to assist in crime lab operations. (Brasilia, ca. 1963) In later years Morris would go on to work with ICITAP, the International Criminal Investigative Training Assistance Program, under the criminal division of the US DOJ. Photo courtesy Morris Grodsky.



Morris in
2009 (with his
signature cigar)
enjoys a visit from
Walter Houde
whom he met at
the San Mateo
Sheriff's crime lab
some fifty years
previously.

One of the members of the gang was a sixteen year old girl who had been sent to a youth facility. While there, talking to one of the matrons, she confided that a fellow member of the gang had killed a man near San Francisco. Apparently this gang member, a young street hustler, had come in one evening bragging that he had just killed a man. He claimed that the guy had wanted to commit suicide but didn't have the guts to do it. So he offered the kid his car, a gun, and whatever money he had, to do the job for him. Apparently the gang leader had slapped the kid a few times for being so stupid and had taken the gun from him. Not long after, the little group had piled into the car and had driven to Oregon where they pulled several burglaries before getting caught.

The FBI agent in Oregon received the information of the purported shooting and arranged an interview with the young street hustler who had been identified by the girl. This person, now incarcerated in a different detention facility, was a skinny nineteen year old youngster who readily admitted that the story was true. When this information was then relayed to our department, detectives were sent to interview the young man. He repeated his story and even drew a crude map to indicate where the shooting took place.

The youngster described the event as follows: He and the victim left San Francisco in the victim's car and drove south along the coast highway. They came to a spot where there were steep cliffs right along the ocean. There was a lookout point at the side of the highway where they could pull the car off the road. It was night, and in the distance ahead they could see the lights of a small village or town. The guy got out of the car and went to the edge of the cliff, and that's where he was shot. The victim disappeared over the edge and the kid got into the car and returned to San Francisco.

We received this information along with a copy of the crude map drawn by the suspect in Oregon. A detective lieutenant and I, the criminalist, were assigned to try to locate the spot and, if possible, to find evidence that a crime had really occurred.

We had a reasonable idea that the location was a spot known as Devil's Slide, a section of the coast highway which had a certain infamous reputation as a dangerous site. Over the years, cars had gone off the cliffs into the ocean at this point. It was a place of steep precipices with a roaring ocean and jagged rocks at the base. We believed that the lights described by the youngster could be the small town of Half Moon Bay a short distance ahead on a level stretch past the cliffs.

On a bright, clear day the lieutenant and I, accompanied by our local FBI agent, drove to the coast to survey what we thought might be the scene of the crime. There we encountered a most bizarre scene, what I would call a criminalist's nightmare. Investigators know that the ideal crime scene is one which has not been contaminated, a place where there has been no intervention by humans or other creatures.

Of course, in a period of approximately eight weeks, an open scene exposed to the elements will suffer deterioration. Still we hoped to find some indications of the shooting which had supposedly occurred at the site. To our dismay, when we arrived the scene that we had selected as our primary choice, rather than an isolated, empty landscape, we found a site humming with activity. Dozens of people were raking the soil, smoothing out irregularities, apparently landscaping our supposed crime scene. Any evidence at this location would have been contaminated or lost. What was happening?

It appeared that a major Hollywood studio was preparing the ground for a scene in a movie starring Lana Turner and Anthony Quinn. This was "Portrait in Black." In the film, a car goes over the cliff at Devil's Slide.

It was evident that if this was indeed the site, it was totally ruined. Nearby, around a bend, was another possible site. We went there and observed a cliff which sloped downward and then had an undercut below which we could not

Dozens of people were raking the soil, smoothing out irregularities, apparently landscaping our supposed crime scene. Any evidence at this location would have been contaminated or lost. What was happening?

see. Down on the sloping portion, we were able to observe a dark blue garment of some kind. Finding a dead tree branch and a secure foothold, the lieutenant was able to snag the garment and recover it.

It was a blue knit ladies dress, dampened by intermittent rains. There were a number of holes in the dress. We thought that possibly it had been used to muffle the sound of gunfire. The folks in Oregon discussed this finding with the suspect, and he admitted that he had indeed muffled the shot with a garment.

We were now fairly convinced that we had the right location. Unfortunately, the weather was miserable for the next few days with rain, fog, and gusty winds. However, a few days later, the weather broke and we had a clear, bright, sparkling day. We arrived at the scene with a pickup truck equipped with a winch and a harness which would permit an investigator to be lowered and raised on the face of the precipice. Around a bend at a strategic location we had an observer equipped with binoculars. He could see the entire face of the cliff which, because of the undercut, was out of our angle of view. With arm signals he could indicate whether to raise or lower the winch.

My partner, the lieutenant, hooked up the harness and began to slowly move across the face of the cliff. I had advised him to look for a cartridge case, a torn piece of clothing, a button, or anything which might indicate that the body of a man had slid down that incline. Soon he was lost to our view. A short time later, we saw the observer signaling to raise the winch, and the empty harness soon appeared. There was a white scrap of paper attached to the harness as it rose, but by the time it had reached the top the top, the paper had apparently become detached.

I assumed that my partner wanted me to join him down below, so I hooked myself up and went over the edge. I moved back and forth laterally as I descended. I could see no evidence of the victim sliding down this slope.

Now, over to my right, I saw the white scrap of paper which had evidently become separated from the harness. It had fallen on a little sandy outcrop. I moved over to pick up the note, and, as I bent down, I saw a minute gleam of gold. I looked more closely. It was a gold wristwatch almost covered with sand. I held it up and, as I was still in view of the top, I yelled to our photographer to photograph me in that spot. Then I bagged and tagged the watch and continued my descent.

I joined the lieutenant and we searched carefully all the way to the base of the cliff. We found no body, but we did find three mentholated cigarettes, unsmoked and clumped together as though they had fallen from a pack simultaneously. They were partially buried in sand, and we found out later that they were the brand smoked by our missing person. Our suspect continued to serve a short stretch as a model prisoner in Oregon. When released, he went to Colorado and entered college. During this time, our investigators worked very hard to show that the victim was not alive. As his body was never found, we were unable to show that he was dead. The wristwatch discovered on the cliff had a serial number which enabled us to learn that it had been a birthday gift to the victim from his mother. The gun, which was supposedly used, was traced through several possessions. The gang leader had sold it to a friend who had sold it to another, and it ended up at last in the hands of a person who decided to throw it into San Francisco Bay. Our good investigators obtained a description of the location near Fisherman's Wharf where the weapon had been dumped.

Our scuba divers submerged at that point, searched the bottom, and came up with the gun.

Now the suspect was extradited to California and was brought to trial. Even though the body of our victim was never found, the young man was convicted of manslaughter.

This was an unusual case. The strongest confirmation of the accused person's confession was the wristwatch found half buried in the sand on the face of the cliff. Would I have found the watch had the torn scrap of paper not landed almost directly upon it? I doubt it. After all, my keen eyed partner hadn't seen it. As for the note, its message was far from earthshaking. It said, "Come on down Morris. The weather's fine."

This article includes material from an obituary in the Golden Isles News, published on April 11, 2017.



#### California Association of Criminalists Spring Seminar May 9-12, 2017 ABSTRACTS

## CAC Founder's Lecture: The Role of Science in Criminalistics — Are We Going the Wrong Way?

John D. DeHaan, Ph.D., FCSFS, CFI, FIFireE, F-ABC(Fire Debris)-Emeritus

Criminalistics can be defined as the application of the physical sciences to law-science matters by the recognition, collection, identification, individualization, and interpretation of physical evidence. Science is the fundamental underlying approach to these responsibilities. There are many disciplines and specialties within criminalistics, but the one common feature is Science. Science is the quest for truth in the physical world. The facts and conclusions reached are sometimes in conflict with the accepted knowledge of the authorities. In our cases, that means we are almost always in conflict with someone's concepts!

I am troubled by the loss of trace evidence analysis in today's crime labs. Trace evidence is what often provides context to the more clinical types of evidence such as blood and other body fluids. Trace evidence permits association of an individual to another person, a scene, or event, but also provides a means of exclusion. Crime scene reconstruction is often an essential part of an investigation (in civil as well as criminal events). Today, most criminalists never see a scene and there is pressure from some quarters that the criminalist should never have information about the scene or the purported events and just do what is requested on the form (because that information is presumed to create bias). That is NOT science!

In many states (and the Federal Courts), we have judges deciding what is good science and what is not, thanks to the Daubert Decision. Nearly all judges were lawyers first, and almost never have scientific education. Instead of turning to other scientists in the discipline (as in Frye states), they turn to "consultants", who often have no knowledge of the scientific issues involved. They can inject their own biases without restriction.

We are now faced with the spectre of being "allowed" to do only tests and procedures that have been approved by a diffuse administrative body of government-selected "experts". This is not science. This means that the weird and interesting one-off cases (particularly scene reconstructions) will no longer have answers, let alone solutions supported by independent scientific enquiries.

As a body of scientists, we have done many great things over the last hundred years or so, solved a lot of crimes, helped clear the wrongly-accused as well as identified the wrong-doer. We have helped the triers of fact understand what happened as well as the "who-dun-it". The Brave New World of mandated testing is a scary proposition. As I step away from the discipline, I have no solutions, except to hold onto the science of criminalistics.

#### Forensic Analysis using Multimodal-FTIR and Raman

Michael S. Bradley, Ph.D., M.B.A. Senior Manager, Product Applications FT-IR,

FT-IR Microscopy, Raman and NIR Thermo Fisher Scientific

FTIR and Raman are both SWGDRUG category A techniques that are very popular among forensic analyst for easy

and non-destructive identification of samples. But in today's world, where materials are getting smaller and more complex, advanced FTIRs techniques are required. During this workshop, we will discuss various multimodal methods as well as the significance of measurement of various samples in the Far-IR region.

## Crime Gun Processing: Getting your stakeholders what they need - when they need it

Brandon Huntley, Ron Nichols, Peter Gagliardi Ultra Electronics Forensic Technology Inc.

This presentation will identify best practices and encourage a good hard look to determine if there are ways in which evidence in the traditional sense and forensic intelligence in the more modern, may be able meet the challenges of today's rising levels of gun related crime in order to seek justice for the victims, resolution for their families and restore peace to their neighborhoods. It has been said that every crime gun holds a story. Some of the story is generated from inside - often referred to as internal ballistics. Some of it from the outside such as: latent fingerprints, DNA and various types of trace evidence. The presentation will explore the broad question: Is gun crime a priority there and is your lab truly collaborating or just cooperating when attempting to meet the needs of your police and prosecutor stakeholders in terms of developing crime evidence and intelligence. The ultimate goal of the presentation would be to provide crime lab leaders with actionable information to take back to their labs and continue the pursuit of excellence in all aspects of operation.

#### The Importance of CODIS DNA Hit Follow-up: A Case Review of Secondary DNA Transfer and the Individual Wrongfully Charged with Murder

Tahnee Mehmet, Criminalist; Kevin Smith, Deputy District Attorney, Santa Clara County District Attorney's Office and Crime Lab

The learning objective of this presentation is to share the case specifics of likely the first documented case of secondary DNA transfer of an innocent individual at a crime scene. The discovery of this individual's DNA profile on the fingernails of the decedent incorrectly implicated him as one of the perpetrators of the homicide, consequently forcing him to serve several months in county jail before his alibi was discovered. This case highlights the extreme importance of conducting proper follow-up investigations once an individual is associated to a crime scene via DNA evidence.

#### Victim Sexual Assault Evidence Kits — the OPD Crime Lab and Alameda County District Attorney's Office Teamwork

Jennifer S. Mihalovich – Oakland Police Department Criminalistics Laboratory, Erin Kingsbury – Alameda Co. DA's Office

The Oakland Police Department Criminalistics Laboratory developed a plan for analyzing victim sexual assault evidence kits to meet the AB 1517 requirements; called the Contemporary Victim Kit Program. The Program goals are to analyze all victim sexual assault evidence kits, enter eligible DNA profiles into CODIS within ten business days, and provide reports to the investigators within twenty business days. This Program requires the support of the county hospital SART, OPD investigators, OPD property room staff, Forensic Biology Unit scientists, and Alameda County District Attor-

neys. This Program has been in place since May 2014. This presentation will describe the teamwork, laboratory's analysis approach and results, OPD's investigations and District Attorney's prosecution of the cases in the Program.

## Combining DNA Testing and Crime Scene Reconstruction to Solve a Robbery-Homicide

Adam Dutra, San Diego Police Department

In mid-2016, a home invasion robbery turned deadly as an escaping victim was shot. Initially, no suspects were identified. DNA testing, assisted by probabilistic genotyping, helped to identify several suspects. Crime scene reconstruction and additional DNA testing helped solidify the case.

# The Forensic Technology Center of Excellence—Continuous Improvement of Laboratory Efficiency and Technology Implementation

Megan Grabenuaer, RTI International

The National Institute of Justice's (NIJ) Forensic Technology Center of Excellence (FTCoE) at RTI International manages the testing and evaluation of emerging technologies applicable to forensic science. FTCoE programs and knowledge sharing place promising innovations in the hands of forward-thinking practitioners, stakeholders, and policy makers—which benefit laboratory efficiencies, implementation of technologies, and quality leadership.

These goals are achieved through technical evaluations and assistance, workshops and symposiums, working groups, landscape studies, and guidance resources.

Over the past 5 years, the FTCoE has engaged and provided support to tens of thousands of individuals in the criminal justice community. This presentation will provide an overview of the FTCoE's goals and mission, as well as an update of recent FTCoE activities and plans for continuous improvement within the program. Exemplary FTCoE activities include technical evaluations and guidance documents on optical topography; handheld breath alcohol analyzers; the use of rapid DNA by forensic laboratories; a mobile app and forensic medical glossary for sexual assault; and working groups specific for crime laboratory directors, human factors, and optical topography. By providing these essential resources, the FTCoE promotes changes in forensic science policy and procedure, which can improve criminal justice and public safety practices on a national scale. This update will also provide information about upcoming events related to Rapid DNA and Impression, Pattern Trace Evidence and inform attendees how to take advantage of services provided by the FTCoE.

## Swap the Swab: Improved DNA Stability and RECovery of Evidentiary Samples

Dan Watsula, MS; Allie Flores, BS; Jangbir Sangha, MA; and Robert Bever, Ph.D. Bode Cellmark Forensics

Collecting a sample from an individual or from a crime scene is only part of the equation. The true success is when that profile can be used to identify a missing person, solve a crime, or exonerate a wrongfully convicted individual etc. Through the use of new preservative based products, investigators and analysts can be confident that the DNA sample they collected has not deteriorated prior to analysis.

#### The Dana Ireland case

Alan Keel Forensic Analytical; Dr. David Haymer, U of Hawaii

The rape/murder of a young girl in Hawaii for which three men were convicted in 1998. California scientists worked for the prosecution and defense and all three men were eliminated as the semen source. Post-conviction litigation is on-going and continuous efforts are being pursued by scientists and the Hawaii Innocence Project.

#### A Curious Case of Firing Pin Marks

Jessica Winn CA DOJ BFS Fresno Crime Lab

An interesting case will be presented where firing pin aperture shear marks were observed on cartridge cases fired in a 38 Special revolver. An attempted homicide case was submitted to the laboratory. The agency requested that test fires from a 38 Special revolver be compared to bullets and cartridge cases recovered from the scene. Although, the bullet comparison yielded inconclusive results; an unknown, but unique, mark was observed on the primer of the questioned cartridge cases. This unknown mark was used to identify one of the questioned cartridge cases to the test-fired cartridge cases from the 38 Special revolver. It was determined during the firearms examination that the unknown mark was produced from the revolvers firing pin aperture and was most likely a result of a manufacturer defect.

## Multidisciplinary Effort to Identify the Cambrian Neighborhood Cat Killer

Michelle Bell, Jeremiah Garrido, Santa Clara Co Crime Lab.; Christina Lindquist, UC Davis- Veterinary Genetics Lab. Forensic Unit; Alexandria Ellis, Deputy DA, Santa Clara Co.; Dr. Sharon Ostermann, San Jose Animal Care Center

In this case study presentation, each member of the multidisciplinary team will highlight their efforts to evaluate and analyze the feline victims and the physical evidence that was crucial to linking Robert Farmer to many more victims than was originally anticipated.

#### Shooting Incident Analysis: Was the Knife in the Hand?

Jason Alexander, SCSCA ANITE Group

A complex officer involved shooting incident is presented with details on the analysis performed to make determinations on shooting locations, movement of the suspect, bullet strike locations. The analysis and reconstruction utilized principles of wound ballistics

research, blood spatter analysis, external and terminal ballistics as well as performance testing.

## 689 shots - The Bank of the West Critical Incident Investigation

Ronald Welsh California DOJ, Central Valley Laboratory

At 2:10 PM on July 16, 2014 three heavily armed gang members attempted to rob a Stockton branch of the Bank of the West. The incident rapidly spiraled out of control into the taking of hostages, a high speed pursuit, and one of the largest shootouts in American history. The incident left two of the robbers and an innocent hostage dead, and forever changed the Stockton Police Department. This presentation gives an overview of the incident with an emphasis on the laboratory's role in the Officer-Involved Shooting Protocol and the subsequent investigation.

#### **Identification of the Oakland Warehouse Fire Victims**

Jonathan Schell, Karen Tsai, Missing Persons DNA Program Jan Bashinski DNA Laboratory; Erin Dunkley, Alameda County Sheriff's Office Crime Lab; Captain Ditzenberger, Sergeant MacIntire, Lieutenant Vandagriff, Alameda County SO Coroner's Bureau

This presentation will briefly cover the history of the warehouse, the DNA methods used to identify victims, and the post-fire recovery efforts. Identification through Rapid DNA and DNA kinship testing was combined with traditional identification methods of dental records, fingerprints, and visual markings to identify all 36 victims.

#### Glamorous Depravity, San Francisco's criminal past

Paul Drexler, Crooks Tour of San Francisco

We will explore the reasons for San Francisco's unique criminal past and discuss the exploits of Isaiah Lees, San Francisco's greatest detective. We'll also examine some of Bay area's most intriguing cases, including those of legendary criminologists E.O. Heinrich and Paul Kirk.

#### **SFDA Victim Services Division**

Jacqueline Ortiz, Dr. Gena Castro-Rodriguez, Pink and Red, SFDA Victim Services Division

Agenda: SFDA Victim Services Division, Overview of Facility Dog Program, Facility Dogs in the Courtroom, Other Areas of Interest, Questions, References and Resources, Contact Information

#### **Probabilistic Genotyping**

John Buckleton, ESR

This talk will cover the current shift in DNA interpretation methods towards probabilistic genotyping. It will describe some recent difficulties with CPI including the lab closures at DFS (District of Columbia), Austin Texas and the more general reappraisal in Texas. The greater power and versatility of PG is a positive motivating aspect and will be discussed. PG methods are all LR based and the use of verbal scales to inform fact finders will be discussed. The core functionality of STRmix and the Monte Carlo Markov Chain process with be described. The recent PCAST report and meetings with software developers is discussed. Also outlined is the response to these criticisms. Recent court rulings and challenges to STRmix are described.

#### **Poster Abstracts**

## Breaking up is easy: The uncoupling of serological and DNA tests in blood exposed to UV light

Mallory, A., Lionudakis Perez, C., and Ballard, R. California State University, Sacramento

Forensic scientists use a variety of presumptive and confirmatory tests when screening evidence for blood. Typically, a visual examination is conducted to identify possible stains, followed by a presumptive test (e.g. Kastle Mayer, Hemastix) to narrow the focus. Stains that test positive may then be further analyzed for human blood (e.g. HemDirect, RSID-blood) prior to downstream DNA genotyping. In this flow of analysis, there is an underlying assumption that true human blood stains will test positive in both the presumptive and confirmatory assays, and that these assays are coupled – i.e a stain that is presumptively negative for blood would not test

positive in a confirmatory assay for human blood, and would not yield human DNA. Furthermore, stains that test positive in a presumptive test and negative in a confirmatory test are likely non-probative.

# The Detection and Identification of Illicit Substances Containing Hetero-Cyclic Amines By Utilizing Copper Iodide as a Photo-Luminescent Indicator

Andrea Christine Ortiz, Francisco Javier Sepulveda, David Nash, Richard G. Blair PhD, Jay R. Vargas PhD CSU-LA

Presumptive drug testing performed in the field, for example color tests, can sometimes result in false positives and false negatives especially with newer designer drugs that have reached the street. In efforts to strengthen presumptive drug testing, the aim of this thesis project is to test the application of a method that uses copper iodide (CuI) as a fluorescent indicator for illicit substances that contain heterocyclic amines in their chemical structure. The dissolved controlled substance is added to a copper iodide solution and into a 96 Nunc black well micro plate. The micro plate is then analyzed using a Molecular Devices-Spectra Max i3 plate reader and unique fluorescent data is generated. The hypothesis is that each substance will have its own unique fluorescence signal due to the complex formed with CuI. This test has the potential of being more discriminatory than standard color tests alone. The data was obtained in collaboration with a research group at the University of Central Florida that is in the process of creating a handheld device for its use in presumptive testing performed in the field.

#### Post Mortem Changes In Ante Mortem Anagen Hairs Following Long Term Vs. Short Term Submersion In Various Solutions

Maya Hamade , Dr. Katherine Roberts CSU-LA

This study was performed for the purpose of evaluating postmortem morphology changes in ante mortem anagen head hairs following long term (147 - 212 days) submersion in eight different solutions. The morphology of these hairs was compared with the results obtained for the short term (14 -23 days) submersion of the corresponding hair samples in the same solutions. The samples were collected from 25 living subjects and the root end of each hair was submerged in each solution. The short term submersion component of this research was performed in a previous study. For the long term submersion study, these same hair samples were removed from their respective solutions, permanently mounted, observed under a polarized light microscope and photographed.

#### Neuropharmacological Screening of Drugs of Abuse Using Freshwater Planarians

Leo Heng Yen Lai, Helen Ha, Apryl Huerta, Dr. Jay R. Vargas California State University, Los Angeles

Freshwater planarians are invertebrate animals famous for their regenerative ability. They exhibit a body plan similar to vertebrates that include bilateral symmetry with head and tail and most importantly an aggregated of nerve cells in the head containing many neurotransmitters and neurotransmitter receptors commonly found in higher order species. By exploiting these characteristics, this research utilizes the planarian animal model to construct a tool for the pharmacological and toxicological screening of control substances. The

ultimate goal of this project is to help forensic science practitioners and lawmakers better understand the pharmacological profile of drugs including the endless stream of novel designer compounds that a major concern to law enforcement and society. Preliminary results focused on narcotics and stimulant drugs will be presented and discussed.

## Resolution of Male/Female epi-epi cell mixtures using Flow-FISH Technology

Harris, C., Preciado, A. and Ballard, R. Cal. St. U., Sacramento

Sexual assault evidence often yields a mixture of DNA from both the female victim and male perpetrator. When spermatozoa are present in these mixtures, isolation of male DNA is relatively simple because the fragile female epithelial cells can be separated from the more robust sperm cells prior to DNA typing. However, separation of the male and female components in male/female epithelial cell mixtures is problematic (e.g. oral copulation, vasectomized male). All cells in the mixed population are structurally similar and will lyse together, leading to mixed DNA profiles.

## Patterns of DNA transfer onto common household items by cohabitants

Angelica Bachman, Leo Kan, Dr. Ruth Ballard CSU-Sacramento

Improvements in the sensitivity of DNA testing have made the analysis of touch DNA routine. However, such evidence is often difficult to interpret because the DNA is typically present a low levels, DNA mixtures are common, and the manner in which the DNA got onto the item is impossible to track. For example, if zip ties are recovered from the wrists of a victim and swabbed for DNA, the result will likely be a low level mixture, with alleles from the victim and other, unknown sources. Furthermore, even if the foreign DNA can be assigned to a particular suspect, this finding does not necessarily mean that he perpetrated the crime. The last person to touch an item may not shed any DNA onto it, and a person who touched the item in the past, before the crime was committed, could be wrongly implicated.

#### Recovery of Blood and Human DNA from a Washing Machine

McNeese, M., Marty, S., and Ballard, R. CSU-Sacramento

Using the theory behind Locard's exchange principle, we wanted to see if it was possible to detect blood, and obtain DNA, from the inside of a washing machine after a bloody item had been laundered in it. We were motivated by a 2012 Washington State homicide case, where the suspect washed his shirt after returning home from the residence of his girl-friend, who was later found murdered. Crime scene investigators collected the shirt, which appeared to be sprayed with high velocity blood spatter, but the Washington State Patrol crime lab was unable to detect the victim's DNA on it. Assuming her blood was originally there, and was removed during laundering, we wondered if the CSI unit could have detected something if they'd swabbed the inside of the machine.

#### Fentanyl Derivative Detection using Immunalysis ELISA Fentanyl Kit

Lizett Ramirez, Jessica Gadway, Oscar Pleitez, Courtney Castellino, Caitlin Miller, Jay R. Vargas CSU-LA

Fentanyl and fentanyl derivatives are attributed to the recent rise in opioid related overdose deaths in the United States. These synthetic opioids are often abused unknowingly in street heroin preparations and in counterfeit preparations of oxycodone and oxycontin. These preparations are deadly due to the high potency of the fentanyl compounds. Therefore, the ability to screen and identify these compounds is paramount in post mortem toxicology. The objective of this study was to assess the potential cross-reactivity of sufentanil, alfentanil, butyryl fentanyl, acetyl fentanyl and carfentanil using the Immunalysis fentanyl ELISA kit. This study also evaluated the ability of the current fentanyl gas chromatography-mass spectrometry (GC-MS) method in use at the LACD-ME-C to detect and analyze these five fentanyl derivatives.

Biological matrices used for analysis were drug free porcine blood and drug free synthetic urine. The blood and urine were spiked with a range of 0.625 ng/mL to 10 ng/mL of fentanyl and each derivative and used as samples with the Immunalysis Fentanyl ELISA kit. Acetyl fentanyl and Butyryl fentanyl were found to cross-react with the fentanyl immunoassay. The data suggests that Immunalysis Fentanyl ELISA kit can be used to screen blood and urine for fentanyl, acetyl fentanyl, and butyryl fentanyl. Results from GC-MS analysis will also be presented and discussed.

# Time Dependent Analysis of Bleach Degradation Residues on Textile Fabrics by Presumptive Chemical Analysis and Ion Chromatography-Mass Spectrometry

Mark LaVigne, Joseph J. Cavaleri, Ph.D., Katherine Roberts, Ph.D.

The use of household bleach in assaults against individuals and in crime scene cleanup or concealment often results in clothing items that are affected by bleach, usually with faded fabric. However, the authors of the present study are unaware of a published standardized procedure to presumptively test and quantify bleach residues on textile fabrics. Under ambient conditions, hypochlorite ions undergo self-degradation to produce chloride and chlorate ions. Therefore, it is reasonable to hypothesize that evidentiary items stained with bleach will experience increased degradation with increased heat or storage time. As evidence backlogs exist in many forensic laboratories, the length of time between evidence submission and actual testing of clothing can determine the quality of information gained from bleach stained fabric analysis.

#### A Comparative Analysis of the Swabbing and Soaking Methods Used to Recover DNA from Live Cartridges and Discharged Cartridge Cases

Yessica Frias, Shannan D. Kelly, Alexandra Chavez, Donald J. Johnson CSU-LA,& LAPD

Live and fired ammunition recovered from crime scenes can be analyzed for touch DNA to identify the loader of the firearm. The traditional method of analysis consists of swabbing the outer surfaces of the cartridges and cartridge cases with a moistened cotton swab. This method produces low success rates of obtaining DNA typing results. The San Diego Police Department has validated a soaking method protocol that seeks to improve the recovery of touch DNA from ammunition. The method consists of submerging the cartridge in lysis buffer during the extraction procedure. The purpose of this study is to compare the traditional swabbing method with the newly-validated soaking method to determine which method produces greater DNA yields and typing results. The study consisted of analyzing 200 live cartridges and 200 discharged

cartridge cases that were loaded into a firearm by two individuals. Half of the samples were handled by the loaders for two days prior to loading while the remaining samples were loaded directly from the ammunition box. Cartridges containing copper were compared to nickel-coated cartridges to determine whether copper has an effect on DNA yields. The DNA samples were quantitated using the PowerQuant® kit and typed using the PowerPlex® Fusion 6C kit. Reportedly, the PowerPlex® Fusion 6C kit reliably produces complete STR profiles from as little as 100 pg of human DNA.

#### Performance of the Illumina ForenSeq<sup>™</sup> Signature DNA Prep kit and MiSeq FGx versus the Promega PowerPlex Fusion 5C kit and ABI 310 GA for the DNA Analysis of Human Remains

Rachel Harris, Melissa Kotkin, Meghan Didier, W. Reef Hardy Ph.D., Diane Flaucher, Al Bodota, Katherine Roberts Ph.D. California State University, Los Angeles

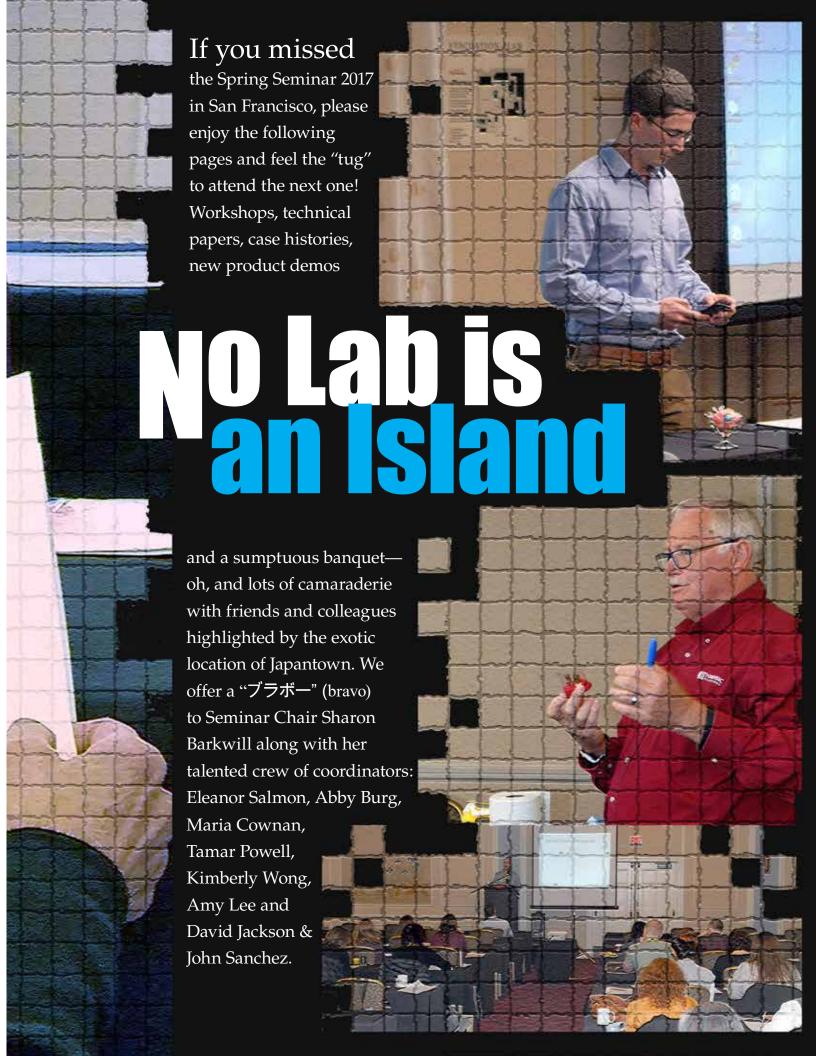
The purpose of this research was to evaluate the success of the Illumina's ForenSeq NGS kit versus Promega's Power-Plex® Fusion 5C system, a traditional PCR-CE kit, for analyzing bone, nail, muscle, buccal, and post-mortem blood specimens -- the sample types most commonly encountered in HID cases. Analyzed samples consisted of 15 buccal swabs, 22 post-mortem blood samples, nine bone samples, six nail samples, seven muscle samples, and eight victim exemplars (four razors and four toothbrushes) collected to mimic possible ante-mortem reference samples. The DNA extracted from each sample was quantified with the Promega Plexor® HY assay to determine which sample type(s) yielded the most genetic material. Each sample was analyzed using either the PowerPlex Fusion system followed by CE on an ABI Prism® 310 Genetic Analyzer or the ForenSeq kit followed by sequencing on the MiSeq FGx<sup>TM</sup> platform according to established protocols.

#### Effects of Alcohol on the Kinematics of Handwriting

Helen Manasyan, Miriam Angel, Dr. Jay R. Vargas CSU-LA

The purpose of this study was to investigate how kinematic features of handwriting change at various levels of intoxication within a social drinking paradigm. Determining the variation in handwriting from alcohol consumption can improve the Forensic Document Examiner's understanding of how consumption of alcohol affects handwriting, to reduce the likelihood that errors would be made attributing differences to another writer. Participants in the drinking study were given a phrase to copy on handwriting forms placed on top of a tablet running MovAlyzeR® software, which recorded dynamic data as the person was writing. The forms were completed before consumption of alcohol and at assigned intervals of controlled drinking. The kinematic features focused on for this experiment include road length, slant, jerk (a measure of smoothness), and duration change. Multiple static handwriting features will also be assessed. Preliminary results from an initial 10 participants will be presented and discussed.











The first day of any great seminar often includes great workshops. Double Casting, DNA (incl. John Buckleton, above), DEA and Legal Interactive were on the menu. Don't forget your registration goodie bag!





































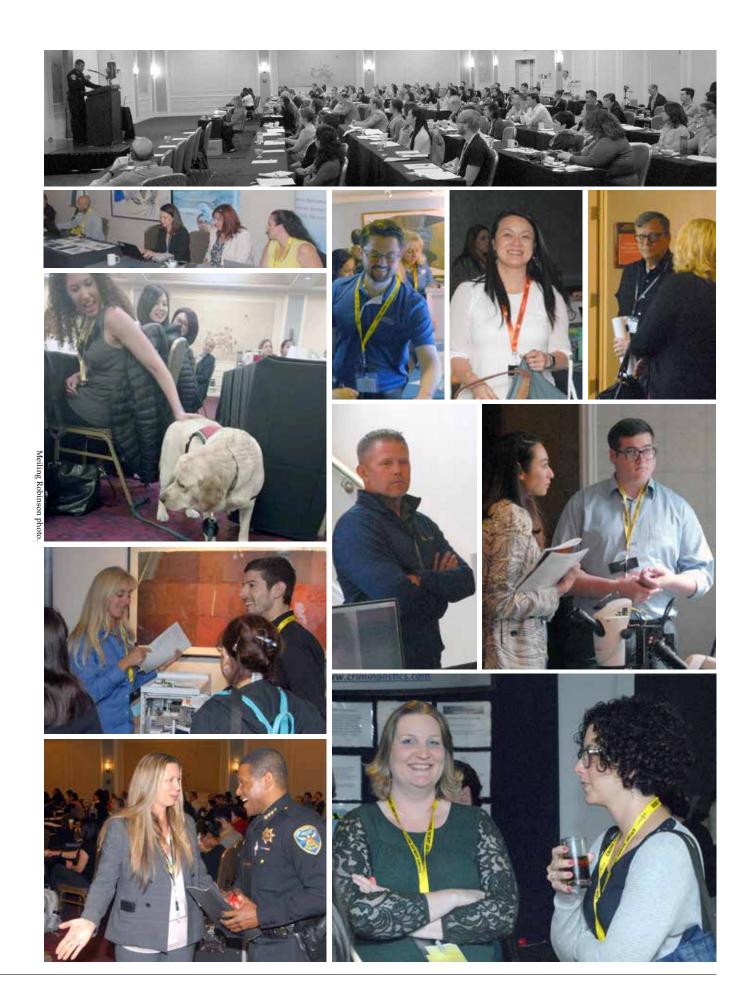


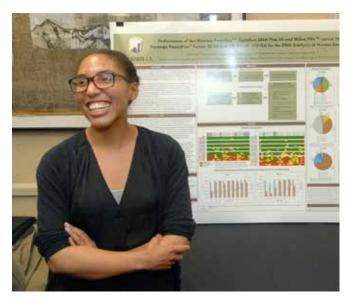












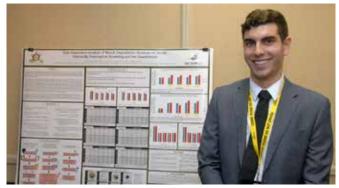


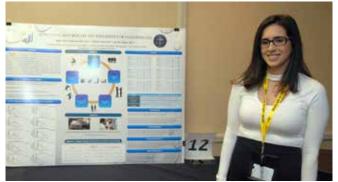


# Poster Sessions



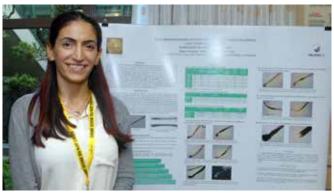






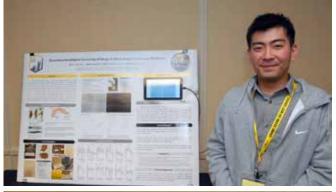
















































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