



TOXTALK

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SOFT 2011 SCHEDULED IN SAN FRANCISCO

Mark your calendar for 25 – 30 September 2011! The 2011 SOFT Meeting is a joint meeting with TIAFT and is to be held during the last week of September 2011, in San Francisco, CA. Please note that this represents a change in the dates and is earlier than the traditional SOFT meeting. The meeting website can be found at www.toxicology2011.com.

September is arguably the best time of year to visit San Francisco. The close proximity of the City to many Bay Area attractions, including the world renowned Napa-Sonoma wine country and the breathtaking Yosemite National Park, should interest you in extending your visit to San Francisco to take advantage of these opportunities. We can almost guarantee perfect San Francisco weather in September. Check out the website for other pre and post conference tour possibilities.

The meeting venue is the beautiful San Francisco Marriot Marquis Hotel which is easily accessible by BART from both the San Francisco and Oakland Airports. Workshops, Scientific Sessions and the Exhibit Hall are all located within this spectacular hotel. Sunday, the 25th, will be a full day for the Young Scientists/Toxicologists day of activities.

The room rates have been guaranteed at \$169 (plus tax) for single or double occupancy, to include complimentary in-room WiFi. (This rate is the 2009 government per diem rate.) The special room rate can be extended to both the weekend before and the weekend following the conference. We currently have all 1400 rooms reserved for our attendees during the Conference dates, so take advantage of this fantastic

deal. Registration for hotel accommodations will be available on the website in early January 2011.

The exciting scientific program, chaired by Dr. **Marilyn Huestis**, and stimulating workshops, chaired by Dr. **Dimitri Gerostamoulos** and Dr. **Laureen Marinetti**, will make this a meeting not to be missed. Please note that because of the earlier meeting dates, the final deadlines for workshop proposals and abstract submissions will also be earlier than usual. **Final workshop proposals are due March 1, 2011 and abstracts submissions are due April 15, 2011.** Workshop proposals and Abstract Submission forms will be available on the meeting website in December 2010. Please make a note of these dates as late submittals cannot be accepted due to the expected size of this meeting. Meeting Registration forms will be available on the website in March 2011.

Dr. Peter Stout and **Dr. Jeri Roper-Miller** are once again serving as the vendor liaisons with more than 100,000 square feet of exhibit space; our vendor colleagues will have an incomparable opportunity to showcase their latest advancements for our forensic toxicology community.

The local committee: Host, Dr. **Nikolas Lemos**, co-host **Ann Marie Gordon**, and treasurer, Dr. **Daniel Isenschmid**, have planned some exceptional social events including a trip to historical Alcatraz Island followed by a San Francisco Bay dinner cruise, a "Streets of San Francisco" welcoming reception with our exhibitors and the Thursday night Presidents' Gala Dinner themed "Uniting Nations". We are looking forward to seeing you all in San Francisco in September 2011.



PRESIDENT'S MESSAGE

Submitted by **Bradford Hepler, Ph.D., DABFT**

“LAST CALL”

The proverbial adage signifying the end of an evening out with good friends ending with a last opportunity to reminisce over the events and times enjoyed and remembered together, can also be applied to the changing of the SOFT guard. The thread of leadership is dynamic, life and time moves on, regardless of past, present or future events. It has indeed been a privilege to serve in the role of SOFT president this past year, and as with everyone who has been in the position of stewardship guiding the leadership of our organization...as noted in Richmond; now some 40 of us...I can look back and say, “Where has the time gone”.

And make no mistake; time does fly by, and it is a stewardship, all of us who have served in this role, have served as volunteers, at the pleasure of the membership, with the understanding that we are there to represent everyone's best interests, and especially those of the organization. All of us have done the best we can to achieve and maintain that goal. Some times it's more straightforward than others, but hopefully good leadership results in smooth sailing, an enjoyable trip, and a seamless transition into the future.

Each and every era comes and goes with its own challenges, issues and complications, and we have had our share this year, as will those who follow. That's what makes it interesting, and worth having had the opportunity to serve. So let me recount just a “snapshot” of the paths taken this year.

The experiment with *Tox-Talk* as an electronic document began my tenure as president. It is now our fourth issue in electronic format, and so far it would seem to be a success. The electronic version has provided

the opportunity for additional pages and content, along with facilitated preparation turn-around times at essentially minimal cost to the organization. The advent of our new website installation at the end of the year also has paid dividends not only on behalf of *Tox-Talk*, but also on behalf of posting meeting abstracts in electronic version. These new postings on our website which now cover several years of history feature the ability to perform electronic searches on content, allowing for easy retrieval of those lost insights and references, where you just know you saw it somewhere, and now you can actually find it. The new version of our newsletter coupled with our new website has meant more versatility in editorial choices and broader use of our organizational website to provide greater user and membership content. These features will continue to grow and improve as time passes.

The effectiveness of the recently formed Forensic Toxicology Council (FTC) towards coordinating a unified and consistent response to the growing fallout from the National Academy of Science (NAS) report continues to increase. This past year has seen the development of a Forensic Toxicology briefing document, which has been pressed into use with both congressional and executive level government officials and representatives in defining exactly who and what we are as a profession, and how we stand apart from Pathologists and Criminalists. The distinction is important and the efforts from this group along with those of the Consortium of Forensic Science Organizations (CFSO) group together have allowed us to establish an identity. The FTC has helped to coordinate our efforts with the CFSO, in their meetings with legislators, committee staff and executive branch committee staff. These efforts have additionally led to identify-

ing and developing a comprehensive list of Forensic Toxicology Laboratory entities that can be contacted, informed and surveyed providing a facilitated means of two-way communication within our industry. Work within Intergovernmental Working Groups (IWGS) at the executive branch level also remains a priority as we strive to develop and maintain contacts within these groups getting out our message. The good news is that we have established ourselves within the broader forensic community as a distinct Forensic Toxicology entity.

The Scientific Working Group representing Forensic Toxicology (SWGTOX) effort has picked up steam over the past year as its various committees and sub-committees have begun their work in earnest. This work is focusing on setting up Standards of Practice within our industry. Through the efforts of many within our group, a source of funding of this activity through the National Institute of Justice (NIJ) has been identified. As a result of more predictable funding, the timeline to complete initial efforts on various projects will be facilitated. It is hoped that by annual meeting time next year we will begin to see the fruits of these labors.

As an outgrowth of the focused effort relative to these SWGTOX projects, and an acknowledged overlap of effort, two of SOFT's long standing ad-hoc committees, “The Laboratory Guidelines Committee, and the MS/MS Guidelines Committee” have been disbanded. If future needs require committee action again in these areas, a mandate can be introduced to reinstate efforts as necessary. The good news in all of this that many of those in SOFT who were members on

PRESIDENT'S MESSAGE (CONTINUED)

these committees are now part of the SGWTOX effort, working to develop appropriate Standards of Practice.

The Richmond meeting is now in the books, and by all accounts, it was a wonderful venue and a great success. Michelle Peace and her crew are to be congratulated on planning, and producing a marvelous scientific and educational, program with, of course, the required attendant joyful social activities that made the celebration of SOFT's 40th Anniversary year, our Ruby Anniversary, a once in a lifetime event. The workshops were well attended, informative, interesting, and worth the price of admission. This year's plenary program, scientific program, and poster sessions, provided drama, insights, data and a quality of science that exceeded all expectations. If you were not able to be there, you missed something special. Future meetings in San Francisco in collaboration with the International Association of Forensic Toxicologists (TIAFT), and the following year's meetings in Boston, and Orlando promise to continue to provide the membership meaningful and necessary scientific education and growth tempered with our valued all inclusive traditions.

Those who have taken on the role of hosting and planning these meetings, along with the task of negotiating the best venue value for the dollar, would tell you that it is not an easy task. It takes time, effort and dedication. People who volunteer to Host these activities are very special, their efforts as individuals and as a group are totally selfless and done without expectation of anything other than doing the right thing by SOFT, for their colleagues and friends who make up the SOFT membership. We are after all toxicologists by profession, and not by nature meeting planners. Part of the effort in meeting planning involves negotiating and signing hotel contracts on behalf of

our organization. SOFT has grown to be a very large organization. Speaking for myself, as individuals we may know what we're about when it comes to issues in Toxicology, but as hotel contract negotiators, we're much better toxicologists.

Given the nature of the economy over the last several years and the downturn that has occurred, the SOFT Board of Directors (BOD) has been evaluating how to improve our position relative to historic contracts signed in better economic times. To that end, it has decided that the use of a professional hotel contract negotiator is justified. In that regard, the BOD has interviewed and talked with four different groups of potential candidates for the job, and decided that one in particular stands out (Helms Briscoe) and hopefully will best represent SOFT in both re-negotiation and negotiation processes as we go forward.

The process will begin with the re-negotiation of our Boston contract, and the future negotiation with our approved venue in Grand Rapids for the year 2014 or 2015 depending on the outcome of the Boston 2012 re-negotiation. Our future venues will be exciting and will continue to be successful, while retaining our own unique character. It is important that as an organization we continue to offer scientifically challenging meetings addressing current needs and topics. Certification and accreditation issues will demand from us as a profession that we participate and attend professional meetings. We need to secure venues that are affordable and cost effective for the membership. Utilization of a hotel negotiator will hopefully see to it that this will be the case as we go forward.

Finally, as you all are aware through an organization wide broadcast e-mail, an "Ethics Code of Conduct" put forward by the ethics committee was on the table for consideration by the membership for endorsement at this

year's business meeting. The mandate for the development of a Code of Conduct comes from the existing SOFT document, "Ethics Procedures" contained within our organization's Policies and Procedures document. Subsequent to that broadcast, many comments about the proposed Code were received both formally and informally by the BOD. As a result of the many thoughtful and valuable ideas received, the BOD voted to return the document to committee for further review, so no action was taken at the 2010 Business Meeting. As a result, until otherwise indicated, the tenants of ethical conduct as established in SOFT's "Ethics Procedures" will continue to remain in effect.

It has been an honor and a privilege to have had the opportunity to serve as SOFT's President this past year. My efforts in this role have reflected the considered input and valued assistance of all on SOFT's leadership team, the BOD and our attendant committee Chairs and their membership. Specific thanks, however, must go to this year's BOD members; **Sarah Kerrigan, Marc LeBeau, Dan Anderson, Peter Stout, Dwain Fuller, Adam Negrusz, Fiona Couper, Jeri Ropero-Miller, Tony Costantino** and ex officio BOD members **Yale Caplan** and **Bruce Goldberger** for their unending and unconditional help and support this past year, providing invaluable perspectives, council and guidance. Finally, my special thanks to **Bonnie Fulmer**, our SOFT Administrative Assistant. She is the gentle force behind the scenes that keeps us organized, "glued" together in focused fashion, and whose love for SOFT and what we're about helps us all make it work.

My best wishes to you and yours this holiday season; all the best in the coming year!

Bradford R. Hepler, SOFT President

SOFT 2010 IN RICHMOND VIRGINIA

The SOFT Annual Meeting in Richmond, Virginia was unforgettable as we celebrated the 40th gathering of the Society. Nearly 1000 guests traveled from across the United States and from around the World to present research and method developments and share anecdotes, memories, and laughter.

Eleven workshops were offered across a wide variety of topics. **Carl Wolf**, the Workshop Coordinator, made a herculean effort to keep 69 instructors informed of deadlines, commitments, and requirements, assemble handout materials, and deliver a seamless experience for the attendees who registered for more than 980 seats. Many thanks to Carl for his selfless and exceptional efforts!

The Scientific Program Co-Chairs, **Julia Pearson** and **Justin Poklis**, with the assistance of many volunteer reviewers and moderators, selected, organized, and delivered a strong scientific program with 385 authors of 124 scientific research abstracts for platform or poster presentations. The program delivered material through several interpreters, both sign language and non-English speaking. Kudos to Julia and Justin for their competent, thoughtful, and smooth execution of the annual scientific program and assemblage of materials for publication!

The SOFT Student Education and Enrichment Program (SSEP) this year targeted teachers, who in turn will pass on forensic toxicology lessons and lab work on the principles of forensic toxicology in post-mortem, DWI, and FUDT to hundreds of Richmond area high school teens. Many thanks to SSEP Chair, **Alphonse Poklis** and his committee for their high energy and enthusiasm for preparing exciting and relevant

lesson plans, delivering the material in a manner that instilled confidence, and sharing his love for this profession to fellow educators.

The Young Forensic Toxicologists enjoyed their inaugural event in Richmond. More than 50 YFTs convened for an interesting and relevant seminar about popular alcoholic energy drinks and an opportunity to get to know other forensic toxicologists. Many thanks to **Teresa Gray** and her committee for coordinating this event!

To celebrate SOFT's rich history, **Sarah Carney** and **Lyndsay Durham** assembled 8 posters that highlighted different areas of development in forensic toxicology and cases. They also provided an opportunity for members and attendees to illustrate their training path so that we could both capture and celebrate the genealogy of forensic toxicologists. Sarah also spent more than a year collating information from official archives in the SOFT office and the backs of closets and old desks and cabinets of SOFT members to create a display that honors SOFT's 40 Presidents and describes the development of the Society. This treasure trove of information was an enormous project that will continue in perpetuity and be displayed at SOFT meetings so that we can continue to honor and discuss our history as we move into the future. Tremendous thanks to both Sarah and Lindsay for helping us to capture our history so cohesively – and thank you for helping them do so!

The SOFT2010 Planning Committee would like to thank the exhibitors for their very generous financial sponsorships that supported so many wonderful fun events in Richmond. Events such as the carnival atmosphere of the Medicine

Show, the historical Fun Run, and the elegant 40th Anniversary Ruby Presidential Ball were enjoyed and appreciated by all.

Thank you for helping to make “fun” additions to our meeting planning so successful! Richmond was the first year for social media such as Facebook and Twitter – in the weeks prior to the meeting, you were visiting the Facebook page more than 100 times per day to learn fun and weird Richmond facts and our favorite places to eat and tour. We also had the great new addition of student volunteers thanks to Virginia Commonwealth University's Forensic Science Student Club! More than 50 of them helped throughout the week - so thanks to **Rebecca Doane** and **Emily Dye** for coordinating and managing them – and, again, thank you for welcoming and encouraging them making their experience so rich!

As the host, I want to thank the entire SOFT 2010 Planning Committee for their countless, selfless, and tireless (or very tired, as the case may be!) hours of commitment to attend to the details of preparing, organizing, and delivering a meeting that was smooth, exciting, interesting, challenging, and a real celebration of science and philosophy. Special heartfelt gratitude to **Sue Brown**, my meeting treasurer, and **Lisa Moak**, my co-host – who were my support, encouragement, and lifeline as they worked alongside me the past several years. Many thanks to the Executive Board for supporting and encouraging me through the planning – I have enjoyed the opportunity to serve SOFT. And, finally, a great thanks to you for making the Richmond meeting rich and exciting! See you in San Francisco!

Michelle Peace, Ph.D.

SOFT 2010 IN RICHMOND VIRGINIA



The 2010 Planning Committee: (from left to right) Rebecca Doane, Les Edinboro, Carl Wolf II, Joseph Saady, Lisa Moak, Alphonse Poklis, Michelle Peace, Sue Brown, Lyndsay Durham, Trish Francis, Curt Harper, Julia Pearson, and Sarah Carney.

2010 SUNSHINE / RIEDERS SILENT AUCTION

The 5th annual Silent Auction memorial fundraiser, benefiting students interested in forensic toxicology, raised \$3,684 for the 2011

Student Enrichment Program in San Francisco. A special mention to **Mr. & Mrs. Michael Baylor** who personally donated 23 of the

60 items available for auction. Thank you to all who contributed the merchandise and who participated in the fun bidding “wars”.

2010 14TH ANNUAL KARLA MOORE MEMORIAL FUN RUN

This event has grown larger each year and includes both true athletes as well as the recreational participant.

Kudos to all participants, but especially to the 2 first place “tie” Men’s Runners, **Mark Roberts**, and **Tracy McKinnon**. Mark Roberts graciously passed the prize to Tracy

McKinnon in the spirit of “good sportsmanship”. The first place Women’s Runner was **Michele Merves**, and the first place Walker was **Frank Esposito**. Exhibitor sponsors of the Fun Run were:

- Agilent (prizes)
- Cerilliant
- OraSure

- Roche
- Quality Assurance Service
- Shamrock Glass

Many thanks to **Trish Francis**, who generously coordinated this event in Richmond for 2010, and to the crew of volunteers who assisted during the run (in the dark) along the established “historical path”.





DRUGS IN THE NEWS

Section Editor, **Dwain C. Fuller, D-FTCB, TC-NRCC**

Send interesting "Drugs In The News" to Section Editor, Dwain Fuller, (Dwain.Fuller@va.gov)

The Second British Invasion Named "Mephedrone"

Submitted by **Robbie Pisana, B.S., MT(ASCP)**

Mephedrone is the latest of the designer drugs to hit the United States. Also known as 4-methylmethcathinone (4-MMC), it is a synthetic stimulant and entactogen drug of the amphetamine and cathinone classes. The "high" mephedrone produces combines the effects produced by cocaine and ecstasy and is sold at 100 percent purity. Mephedrone started around 2007, being sold over the Internet as an alternative to Miracle Gro, that's right; it started out as a plant food.



Mephedrone can come in the form of capsules, tablets, or powder and can be swallowed or snorted.

There are a number of street names that Mephedrone goes by: "sunshine" is the name used in the Pacific Northwest, "stardust" is

used in the Midwest, with "drone" and "bubble" used in the East. In Britain, the chemical name 4-methylmethcathinone, or MCAT for short, was changed to meow-meow.

It was a quickly discovered that mephedrone would produce an amphetamine-like high resembling cocaine, but with not as fierce a reaction, and a feeling of euphoria like ecstasy produces. It became popular among the club crowd in the United Kingdom as a legal substitute for other drugs. The ease in which mephedrone could be bought and the fact that it was legal gave the buyer a sense of security that this substance cannot be harmful.

Mephedrone's popularity in the United Kingdom, between the summer of 2009 and the spring of 2010, coincides with the impurity of ecstasy and cocaine increasing during this time. The impurity of ecstasy was largely due to the fact that the countries of Cambodia, Vietnam and Thailand got serious in controlling the production of safrole oil, which was used as a precursor in the manufacturing of MDMA. In addition, the DEA estimates that one third of all cocaine being sold by street dealers is tainted with levamisole (a veterinary de-worming medicine). The United Kingdom classified mephedrone as a class B drug under the Misuse of Drugs Act in April 2010 after the deaths of 25 people were attributed to it.

One of the first reported cases of mephedrone use in the United States occurred in Bend, Oregon. In March 2009, a 16-year-old girl is said to have snorted a couple of lines of mephedrone, believing that she was snorting a pure form of ecstasy given to her by her boyfriend. She woke up the next day shaking, hyperventilating and experiencing cold sweats. She was taken to the hospital with the symptoms lasting a few days. A sample of the drug was sent to the Oregon Crime Lab, which could not identify the substance. A sample was sent to authorities in Australia, whom identified the drug as mephedrone.

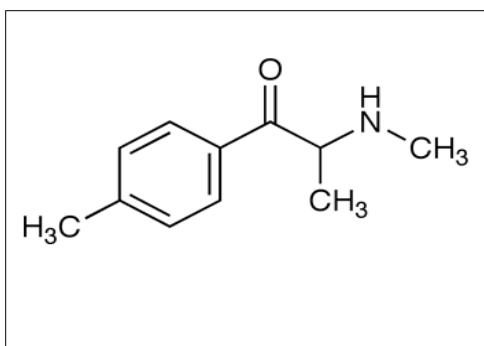
Mephedrone at the federal level has a quasi-legal status. Users can be charged under the Analog Act of 1986; unfortunately, prosecution would be difficult, because it must be proven that the drug is intended for human consumption and mephedrone is sold as plant food with the warning of "Not For Human Consumption" on all packaging. The only state to ban mephedrone at this writing is North Dakota. It was being sold as a bath salt called stardust.

The synthesis of mephedrone can be accomplished by adding 4-methylpropiofenone

The opinions expressed herein are solely the opinions of the author and do not necessarily reflect the opinions of the Society of Forensic Toxicologists, Inc. or any other entity.

DRUGS IN THE NEWS (CONTINUED)

dissolved in a weak acid to bromine to create an oil fraction of 4-methyl-2-bromopropiophenone. This oil fraction is then dissolved in a solvent. This solution is added drop wise to a mixture of an organic solvent containing a methyl and triethyl amine. The aqueous layer is removed and acidified with hydrochloric acid. This solution is made basic with sodium hydroxide before the amine is extracted using an organic solvent. This mixture is evaporated under vacuum, creating an oil residue, which is then dissolved, in non-aqueous ether. An acidified gas is bubbled through this mixture producing 4-methylmethcathinone hydrochloride.



Being similar in structure to the amphetamines, mephedrone produces the following effects:

- Feelings of empathy (openness, love, closeness, sociability, well-being)
- Stimulation, alertness, rushing
- Euphoria, mood-lift, appreciation.
- Awareness of senses

The effects of mephedrone on the brain are on the monoamine transporters for dopamine, serotonin and noradrenalin.



Mephedrone binds to these transporters promoting the release of the monoamines.

At present, little is known of the long-term effects of mephedrone due to the short time it has been available for study. The toxicity of mephedrone use comes from 4-methylephedrine (a metabolite of mephedrone) known to have more cardiovascular toxicity than ephedrine. Short-term effects to users are high blood pressure, chest pains and occasional seizures.

It is too early to tell if the prevalence of mephedrone use will be as high in the United States as it was in the United Kingdom, but it is well worth watching to see if consumption increases.

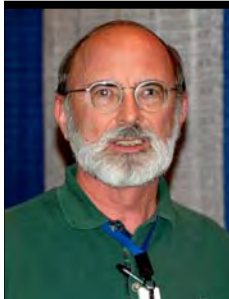
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CASE NOTES

Section Editor, **Matthew Barnhill, Ph.D., DABFT**

Send interesting "Case Notes" to Section Editor, Matthew Barnhill (mbarnhilljr@worldnet.att.net)

CASE NOTES: THE DECADE OF LIVING DANGEROUSLY

Submitted by **Jon E. Copeland,**
Toxicology Section of the Phoenix Police Dept., Laboratory Services Bureau, Phoenix, AZ

Introduction

The Phoenix Police Department (PD) utilizes blood alcohol testing by headspace gas chromatography (HSGC) as the primary method of analysis, and breath alcohol analysis using the Intoxilyzer 8000 as a secondary method. In 2009 the Phoenix PD Crime Lab Toxicology Section performed approximately 7,500 blood alcohol analyses. Recently the toxicology section of the Phoenix Crime Lab conducted a blood alcohol analysis on a sample with an unusually high blood alcohol concentration (BAC).

Note: Average BAC result for samples tested in 2009 was 0.164 g/100mL

Case History

On 25 September 2010 the Phoenix Police Department (PD) arrested a 36year old male for DUI. The subject was passed out behind the wheel of his vehicle, which was blocking one lane of a two-lane freeway onramp at 3:56 PM on a Saturday. The vehicle was in drive, with the engine running, and the subject's foot on the brake. Police were notified of the incident by concerned citizens who turned the engine off, and removed the keys from the ignition. The witnesses reported that they were able to wake the subject up and assisted him in walking to the passenger side of the vehicle. They then helped him into the passenger seat. The subject was transported to the hospital due to his intoxication level, and one of the responding police officers attempted to interview the subject. However, the subject did not

respond to the officer's questions. A hospital staff member drew a blood sample from the subject, which was impounded for analysis. The blood draw was taken 49 minutes after the police arrived on scene. The sample was tested by the Toxicology Section of the Phoenix PD Crime Lab using headspace gas chromatography (HSGC). The BAC of the sample was determined to be 0.537 g/100mL. While it is impossible to discern exactly how much alcohol the subject consumed, the police reported finding 3 empty cans of beer and 9 "shot" liquor bottles in the subject's vehicle.

Of note, this was the *third* time the Phoenix PD Toxicology personnel had analyzed this particular subject's blood in the last ten years. The first incident occurred in 2000 at 7:50 AM, the subject lost control of his vehicle and collided with a concrete irrigation control structure, fracturing his C3 and C4 vertebrae. The subject's blood was drawn 33 minutes after the accident, with the BAC determined to be 0.457 g/100mL.

Three years later in 2003, Phoenix PD responded to another single vehicle accident involving the subject, which occurred at 5:30 PM. The subject crossed multiple lanes of traffic and collided with a block wall. The responding officer reported the subject did not have head trauma, but was disoriented and confused at the scene. Additionally, the subject had urinated and vomited on himself. Unlike the first and latest incidents, this time the subject was coherent after he was transported to the hospi-

tal, and the officer was able to interview him. The subject admitted to being an alcoholic, but stated he hadn't had anything to drink since consuming a pint of vodka at 6:00 PM the previous day.

The officer was a certified Drug Recognition Expert (DRE) and was able to perform a partial drug evaluation. He suspected the subject was under the influence of a CNS stimulant so requested the subject's blood be tested for alcohol and drugs. The subject's blood was drawn 85 minutes after the accident. However, the blood sample was determined to be negative for alcohol, and the Enzyme Multiplied Immunoassay (EMIT) blood drug screen was negative for amphetamines, barbiturates, benzodiazepines, cannabinoids, cocaine metabolite, opiates, and phencyclidine.

While the analytical results of the second incident in 2003 were negative for alcohol and drugs, circumstances of the accident point to the likelihood of impairment as a factor, perhaps by something not able to be detected by the EMIT screen. However, even judging solely by the subject's extremely high BACs in the 2000 and 2010 incidents, it is astounding that as of this date: (1) this individual has only injured himself in the course of his extremely impaired driving career, (2) he is still alive, (3) that he is able to function in any capacity at such high blood alcohol concentrations. As a final thought, how many times has he successfully beaten the odds over the last 10 years, to the good fortune of the citizens of Phoenix?

CASE NOTES: PHARMACOKINETIC AND PHARMACODYNAMIC DISTRIBUTION OF LISDEXAMFETAMINE (A PRODRUG OF DEXTROAMPHETAMINE) IN A POSTMORTEM SAMPLE

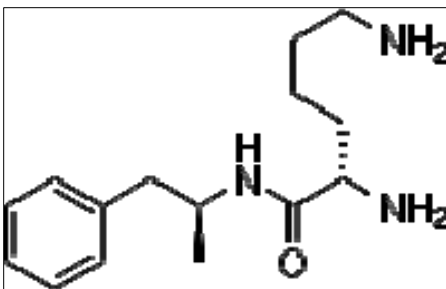
*Submitted by Protiti Sarker, M.S., Ginger Baker, M.S., Rong Hwang, Ph.D.,
Scientific Laboratory Division, New Mexico Department of Health*

Introduction:

Lisdexamfetamine dimesylate (Vyvanse®), is a prodrug of the psychostimulant dextro-amphetamine, coupled with the essential amino acid L-lysine. Prodrugs are compounds that are inactive in their parent forms of drugs which require metabolism to active forms. This mechanism allows better absorption and longer lasting effects. In the case of lisdexamfetamine, the drug itself is inactive until the first pass through the intestine and/or liver cleaves off the amino acid L-lysine, leaving the active drug dextroamphetamine. This drug is marketed by Shire Pharmaceuticals, and in 2007 it received FDA approval for the treatment of attention-deficit hyperactivity disorder in pediatric patients ages 6-12. In April of 2008, the drug received FDA approval for adults.

Lisdexamfetamine dimesylate is designed as a capsule for a once-a-day oral administration. It is available in dosage strengths of 20mg, 30mg, 40mg, 50mg, 60mg, or 70mg. Due to prodrug design, it has a lower potential for abuse as it is inactive until absorbed through the intestines.

Structure:



Case History:

Decedent was a 20 year old male, diagnosed with ADD and paranoid schizophrenia as a teenager. He had been recently hospitalized, and was prescribed for Vyvanse (dosage 50mg), Benztropine (dosage 2mg) and

Haloperidol (dosage 10mg). When he was released from the hospital his father took him for an extended stay in a hotel in Las Cruces, NM, and that was the last time the father spoke/saw the decedent. A few days later when the father went to the hotel to bring his son some clothes, he found the doors locked from inside but there were no answers. He could also smell a strange odor coming from inside. The father then opened the door with help from the hotel-staff, and they found the decedent lying prone in the bathroom. The dead body was in an advanced stage of decomposition, so EMS was not contacted.

Postmortem Toxicology:

Postmortem femoral blood, heart blood, liver tissue, brain tissue, muscle and urine were submitted for toxicological analysis. The following analytical methods were used:

- Femoral blood was tested for ethanol and other alcohols by head-space gas chromatography.
- Femoral blood was tested for drugs-of-abuse by ELISA.
- Femoral blood, Heart blood, Liver tissue, Brain tissue, Muscle, and Urine were tested for Amphetamine by GC/MS.

Result: (see table below)

Specimen	Alcohol	ELISA	GC/MS
Femoral	0.047 gm/100ml	Negative	Amphetamine 1.1 mg/L, Benztropine present.
Heart	Not tested	Not tested	Amphetamine 0.45 mg/L
Liver	Not tested	Not tested	Amphetamine 1.1 mg/kg
Brain	Not tested	Not tested	Amphetamine 1.1 mg/kg
Muscle	Not tested	Not tested	Amphetamine 12.0 mg/kg
Urine	Not tested	Not tested	Amphetamine Present.

Discussions:

Lisdexamfetamine is a prodrug of dextroamphetamine. After oral administration, lisdexamfetamine is rapidly absorbed from the gastrointestinal tract and converted to dextroamphetamine, which is responsible for the drug's activity. Amphetamines are non-catecholamine sympathomimetic amines with CNS stimulant activity. The mode of therapeutic action in Attention Deficit Hyperactivity Disorder is not known. Amphetamines are thought to block the reuptake of norepinephrine and dopamine into the presynaptic neuron and increase the release of these monoamines into the extra neural space. The parent drug, lisdexamfetamine, does not bind to the sites responsible for the reuptake of norepinephrine and dopamine in vitro.

Note that, the Methamphetamine kit we used for drug screening (i.e., ELISA) does have low cross reactivity with d-amphetamine is 2% and L-amphetamine is 3.4%. So, one must be careful in providing conclusions regarding this drug just from screening results.

References:

- <http://en.wikipedia.org/wiki/Lisdexamfetamine>.
- Jasinski DR, Krishnan S. Abuse liability and safety of oral lisdexamfetamine dimesylate in individual with a history of stimulant abuse. *Journal of Psychopharmacology*, 2009
- Matthew J. Ellenhorn, Ellenhorn's Medical Toxicology, Second edition, page 134

CASE NOTES: PHYSIOLOGICAL EFFECTS OF K2

Submitted by Michele Glinn, Ph.D., D.A.B.F.T, Michigan State Police, Lansing, MI

The recent rise in popularity of synthetic cannabinoids is due in no small part to the obvious attractions of a drug that has similar effects to marijuana, but is not controlled** and not easily detectable in biological samples. The most common are JWH-018 and JWH-073, and were originally synthesized by J.W. Huffman at Clemson University. Also known are HU-210, from Hebrew University, CP-47497 from Pfizer and several other related compounds. These chemicals have been obtained or produced by clandestine chemists, who spray them on dried plant material and sell them as incense or potpourri under names like Spice and K2. The price, \$40 for 3 grams, is roughly comparable to that of mid-grade marijuana¹. None of them are structurally related to cannabinoids, and none cross-react with most current commercial cannabinoid immunoassays.

In addition to knowing what these compounds are, it is essential to

understand their effects on function and their metabolic and excretion profiles. For effects, we can turn to the internet, where anecdotal reports are numerous². Experiences are variable. Many users say the high is milder and the side effects, including rapid heartbeat, dysphoria (paranoia) and joint aches, more intense. Others report a high very similar to cannabis itself. Duration also varies: some users find it lasts longer than cannabis, others that it ends abruptly. The attraction for most is not that it's a better drug than marijuana, but that it's legal.

One of the first scientific reports to appear on Spice was published on-line in 2009 in the Journal of Mass Spectrometry by Auwarter et al of the University Medical Center in Freiburg, Germany³. In one of the oldest (if not the finest) traditions of biological research, two of the authors experimented on themselves and shared a cigarette containing 0.3 gm of Spice Diamond. They reported

"considerably reddened conjunctivae, significant increase of pulse rates, xerostomia and an alteration of mood and perception." There were no psychomotor abnormalities noted, but the subjects felt impaired, and had hang-over effects throughout the next day. Analysis of the herbal material showed the presence of JWH-018, CP-47497, and two compounds which were not conclusively identified but appeared to be related to the latter. One of the related compounds was also found in the subjects' blood.

The Toxicology Unit of the Michigan State Police (MSP) Forensic Sciences Division, in conjunction with Drug Recognition Experts (DREs) of the Auburn Hills Police Department, undertook a study on the physiological effects of synthetic cannabinoids. The Toxicology Unit was given two lots of K2 obtained from head shops in East Lansing and Auburn Hills, Michigan. We extracted the active compounds from the herbal material with 1 ml/mg methylene chloride. The procedure was simple and gave consistent results, most likely because the compounds were applied to the surface of the plant material, and did not have to be isolated from the cellular components as is the case with THC. Analysis of the extracts by GC/MS showed that the active ingredients in both samples were JWH-018 and JWH-073 (Figures 1 - 2)^{3,4}.

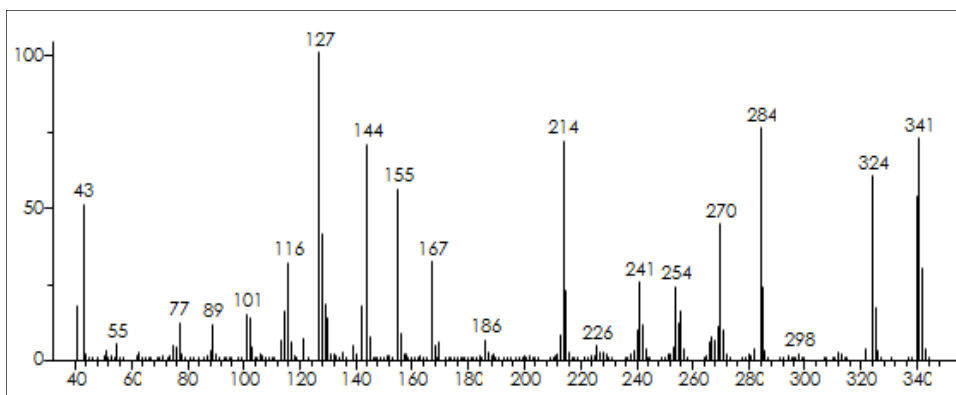
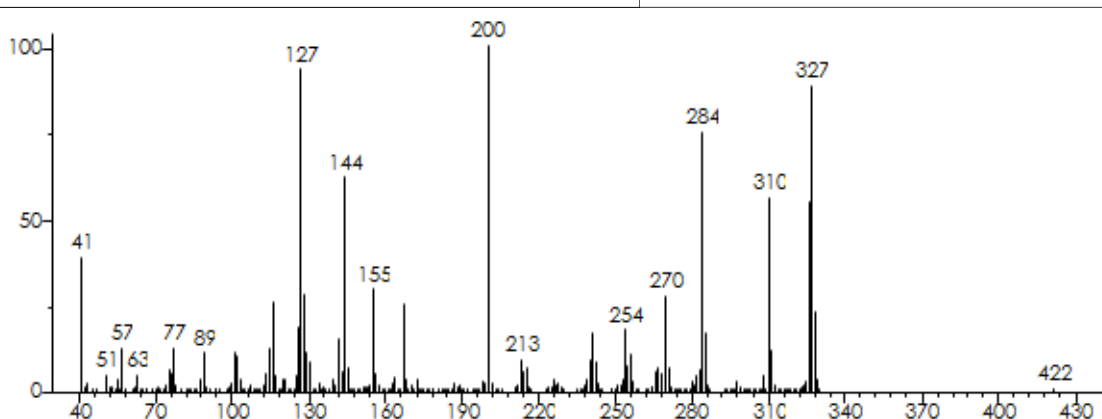


Fig. 1: GC/MS spectrum of JWH-018 extracted from K2 herbal material.

Figure 2: GC/MS spectrum of JWH-073 extracted from K2 herbal material.

**Editor Note:
See pg 23 announcing a DEA notice of intent to place five synthetic cannabinoids into the Controlled Substances Act.



CASE NOTES: PHYSIOLOGICAL EFFECTS OF K2 (CONTINUED)

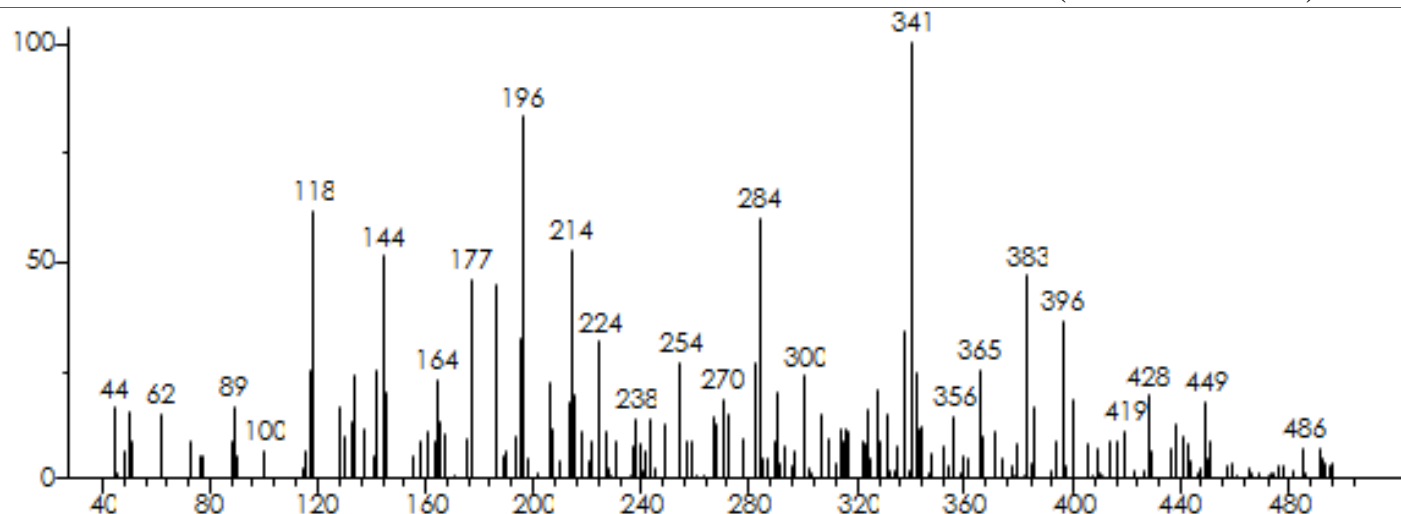


Figure 3. JWH-018 extracted from subject's blood, full-scan mode.

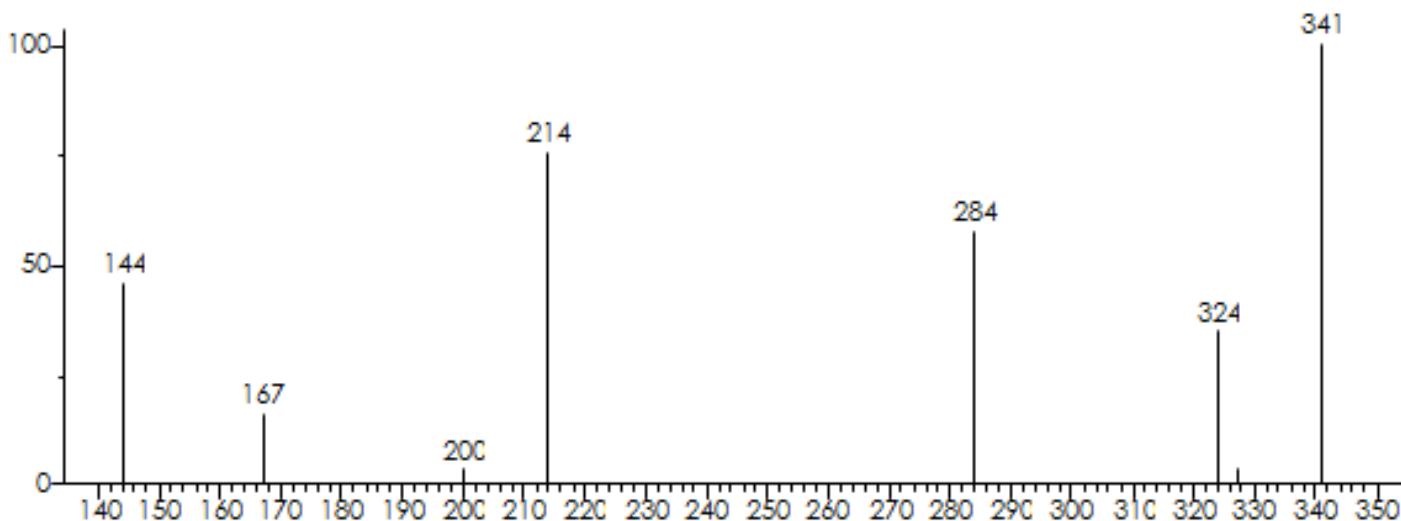


Figure 4. JWH-018 extracted from subject's blood, SIM mode

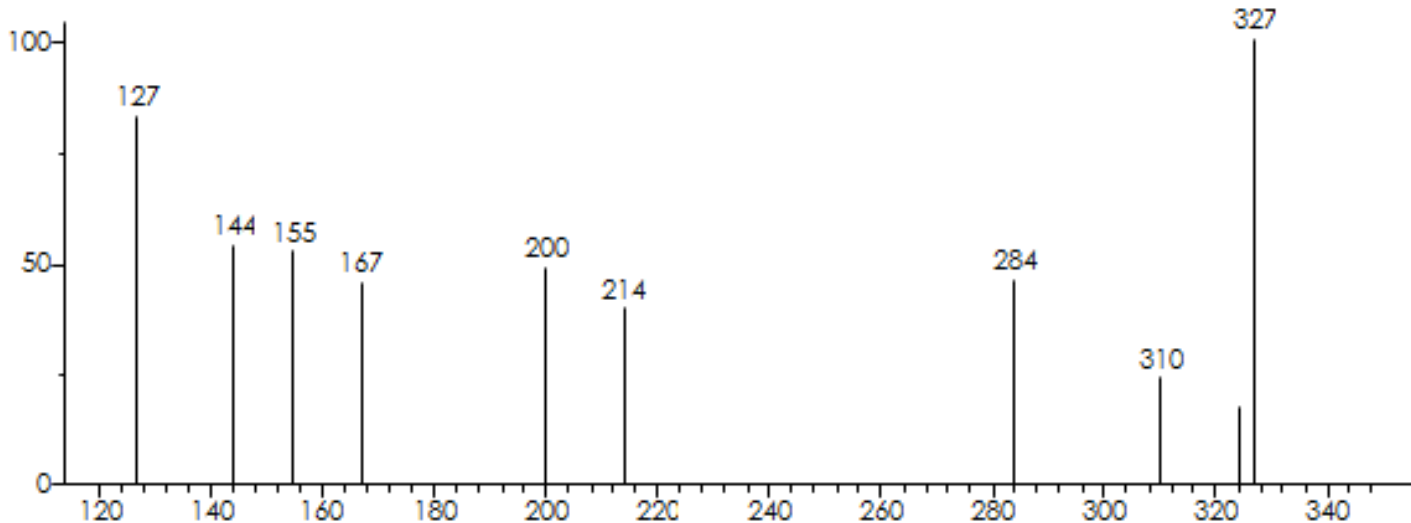


Figure 5. JWH-073 Extracted from subject's blood, SIM mode.

CASE NOTES: PHYSIOLOGICAL EFFECTS OF K2 (CONTINUED)

No other compounds were found. As expected, none of the extracts cross-reacted with the cannabinoid panel of our laboratory's immunoassay screen (Randox Evidence).

We then spiked blank blood samples with varying amounts of the K2 extracts and analyzed them by our laboratory's usual confirmation method, using UCT DAU solid phase extraction columns and eluting acid/neutral drugs with 50:50 hexane/ethyl acetate and basic drugs with 78:20:2 methylene chloride/isopropanol/ammonium hydroxide. The eluates were dried, reconstituted in 40 - 50 μ l of ethyl acetate, and analyzed by GC/MS in both full-scan and SIM mode. We found that JWH-018 and JWH-073 elute late in the acid/neutral fraction, which is quite convenient, as few other drugs are seen in that range. Neither compound derivatized with PFP or HFIP. The LOD was estimated to be 5 - 10 ng/ml.

The DREs then dosed a subject with the Auburn Hills lot of K2 as part of a plea agreement. The subject was a regular THC and K2 user, but had not used either substance in the five days before the exam. He completed a physical and DRE evaluation. Findings were normal. He was then given a bag of K2, rolled one cigarette estimated at 1.5 grams, and smoked it. Afterwards, he was taken to the booking area and completed a second DRE evaluation. Findings: (see table).

Post-dose, the subject had increased body temperature and pulse rate, muscle tremors and distinctive opticokinetic symptoms. Although the subject's temperature was elevated, he reported that he did not feel warm. He completed the SFSTs as instructed, although it seemed to take greater effort than the same tasks pre-dose. He told the officers that K2 was addicting and had mind altering and "bizarre" effects. The DREs' conclusions: the effects of JWH-18 and JWH-073 are

Parameter	Pre-Dose	Pose-Dose
One Leg Stand	No errors	Swayed, bent knees, leaned, nearly fell
Walk-and-Turn	One error during turn	Incorrect turn, more deliberate steps
Romberg	No sway	Visible sway
Finger to Nose	Problems locating tip of nose	Did better than pre-dose
Nystagmus	None present	None present
Convergence	Normal	Left eye unable to converge
Pupils	6.5 mm	6.5 mm Slowed reaction to light, rebound dilation
Eyes	Normal	Bloodshot, droopy
Eyelids	Normal	Tremors
Muscle	Normal	Tremors; tone normal
Pulse Rate	98	114
Blood Pressure	150/104	148/102
Temperature	98.8	99.5; skin warm to touch

similar to those of THC and the dissociative anaesthetics. They noted that the subject is a regular user of K2 and may have developed some tolerance; SFST performance might be poorer in a first-time user.

Blood and urine samples were taken before and 30 minutes after the end of smoking, and sent to the MSP Toxicology Unit for analysis. No synthetic cannabinoids were seen in the pre-dose specimens. However, JWH-018 and JWH-073 were seen in both blood and urine post-dose (Figures 3 - 5, previous page). JWH-018 was present at a high enough concentration to see in blood in full-scan mode, but JWH-073 required SIM for resolution. Both peaks were present at a higher intensity in blood than in urine, which may have been a result of the urine collection so soon after the cessation of smoking.

Conclusions:

The active ingredients of two varieties of K2 sold in East Lansing and Auburn Hills, MI are JWH-018 and JWH-073. These

compounds are not detectable by our lab's immunoassay screen, but can be identified by GC/MS. Blood levels of both 30 minutes after one cigarette appear to be in the low ng/ml range. Physiological effects are similar to those of cannabis and the dissociative anesthetics.

Epilogue:

A bill currently under consideration by the Michigan Legislature would make synthetic cannabinoids, including JWH-018 and JWH-073, Schedule I controlled substances. The medical marijuana business in Michigan, however, is prospering. It remains to be seen how the relative popularity of these two substances changes with alterations in their legal status.

References:

1. <http://norml.org>
2. <http://www.erowid.org>
3. <http://onlinelibrary.wiley.com/doi/10.1002/jms.1558/abstract>
4. Lindigkeit et al, *For. Sci. Int.*, 191(2009):58-63.

TECHNICAL NOTES

CYANIDE BY CONWAY DIFFUSION W/ A COLOR

Submitted by *Theodore J. Siek, Ph. D., D-ABFT*

Cyanide salts are highly toxic and a convenient screening test has been published (1). The diffusion technique described below for trapping cyanide by means of a Conway cell can be applied to a number of analytes which will be listed after describing the cyanide (CN^-) determination. A Conway cell and lid is shown in **Figure 1**.

Reagent Preparation:

Dissolve 0.76 g *p*-nitrobenzaldehyde (NBA) in 100 ml of methyl cellosolve (*aka* ethylene glycol monomethylether) and 0.54 g *o*-dinitrobenzene (DNB) in 100 mL methyl cellosolve. Store these reagents in brown bottles which are stable for 6 months in refrigeration.

Cyanide Calibrators:

Prepare a stock potassium cyanide (KCN) of 1.0 mg/mL in aqueous 0.5 N NaOH in a polypropylene container. From this make dilutions to 0.05, 0.10, 0.50 mg/L into aq. 0.1N NaOH for working standards. A significant blood concentration will be greater than 0.05 mg/L cyanide.

Procedure:

Place 50 microliter of aq. 0.1N NaOH in the center well, then 0.05 mL of NBA, 0.05 mL DNB. Add 0.1N HCl to the outer ring (moat); then add 1 mL of test liquid (blood, urine, watery gastric) to the middle ring, add 3 drops of 3N H_2SO_4 to convert any CN^- ion to HCN so it can diffuse into the center well. Seal with the plastic cover and place a box over the set up Conway cells. Stand for at least 30 min. High cyanide contents will produce a purple color within 5 min. and low concentrations will cause coloration in about 30 min.

By adding more test aqueous liquid, the detection limit is lowered to less than 0.05 mg/L. The test can be adapted to a test tube test for a quick read of reagent strength or to quickly test a gastric, a urine, or a aqueous liquid which gives a hydrogen cyanide odor (bitter almonds).

Toxicity:

Concentrations about 0.2 mg/L in blood should be viewed with alarm; cyanide is acutely toxic above 0.5 mg/L (blood) and can be fatal above 1 mg/L. There are no common interferences to this particular colorimetric test for cyanide with the diffusion technique.

1. W. A. Dunn and T. J. Siek, **J. Analyt. Tox.**, 14, p. 256, 1990.



FIGURE 1.
CONWAY DIFFUSION CELL

THIOCYANATE IN
SERUM BY
COLORIMETRY

Thiocyanate is used for medical purposes to control blood pressure and is also a metabolite of cyanide. Therefore cyanide poisonings should be tested for thiocyanate and thiocyanate overdoses should be tested for cyanide.

Reagents:

Ferric nitrate nonahydrate, 5 g in 52.5 mL of conc. nitric acid and dilute to 200 mL with water; reagent grade ethanol (190 proof OK); 15% trichloroacetic acid (TCA), 150 g to 1L water; aqueous thiocyanate stock 0.5 g/L (0.84 g/L of potassium thiocyanate). From the stock thiocyanate (0.5 g/L) make 5, 15, 30, and 50 mg/L calibration aq. solutions. Set up in 12 X 75 mm TT as in **Table 1** (see below). After adding TCA, vortex, centrifuge and transfer clear supernatant as indicated.

A double volume of blank is used if a double beam scanner is used to obtain a zero absorbance at 470 nm. A 30 mg/L standard gives an absorbance of approx. 0.190 A. The detection limit is just under 5 mg/L.

TABLE 1.
SETTING UP A COLORIMETRIC THIOCYANATE TEST

Tube	No. Std/spec.*	TCA	Supernatant	EtOH	Fe(NO ₃)
1	0 blank	1 mL	1.0 mL	4 mL	0.2 mL
2	5 mg/L	1 mL	0.5 mL	2 mL	0.1 mL
3	15 mg/L	1 mL	0.5 mL	2 mL	0.1 mL
4	30 mg/L	1 mL	0.5 mL	2 mL	0.1 mL
5	50 mg/L	1 mL	0.5 mL	2 mL	0.1 mL
6	test serum	1 mL	0.5 mL	2 mL	0.1 mL

*A volume of 1 mL for standards and test serum/plasmas.

TECHNICAL NOTES

TOXICOLOGY RESEARCH—SEARCH TIPS FROM A FORENSIC LIBRARY

Submitted by **Jeff Teitelbaum**, MLIS, WA State Patrol, Seattle, Washington (Jeff.Teitelbaum@wsp.wa.gov)

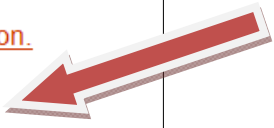


PubMed is indisputably one of the most valuable public databases available, especially to forensic scientists. In talking to scientists over the years, however, it's been clear to me that many of the most useful and unique features of PubMed go unused. No longer! This column will discuss several search features that I use virtually every day and which should be in every forensic scientist's searching toolbox.

First, a little background about PubMed. Behind the scenes of PubMed is something called **Medline**, which is the actual bibliographic database produced by the National Library of Medicine. There are currently over 20 million citations in the database culled from over 5,000 journals. Now, there are other databases that have gaudier numbers. **Web of Science**, for instance, has material from the 1900's on and draws from nearly 9,000 journals, but you can't really compare the numbers between Medline and Web of Science since the latter contains a substantial amount of material from the arts and the humanities.

PubMed is the free, public interface to the Medline database (Web of Science, by the way, is not free by a long shot!). PubMed is extremely up-to-date, with weekly, if not daily, updates, and provides citation access to new and "early" published articles. By comparison, Google is often months behind tracking new articles. PubMed also contains **PubMed Central**, an amazing repository of over 1.5 million free, full-text articles. The articles from PubMed Central are included in any search results, so for nearly any search you might make, you'll usually be able to download at least a few full-text articles to get you going.

[Drinking, drugs and driving in Ireland: more evidence for action.](#)
 8. Fitzpatrick P, Daly L, Leavy CP, Cusack DA.
 Inj Prev. 2006 Dec;12(6):404-8.
 PMID: 17170191 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Free text](#)
[Related citations](#)



Although there are a number of important forensic-related journals that are not indexed in PubMed (**Journal of Forensic Identification**, the **Association of Firearm and Toolmark Examiners Journal**, to name a few), the number of core journals related to the forensic sciences is impressive, and it is very reassuring to have an authoritative indexing of this material. Here is a partial listing of these titles:

- Alcohol and Alcoholism
- Alcohol, Drugs, and Driving
- Alcoholism, Clinical and Experimental Research
- American J. of Forensic Medicine & Pathology
- Australian Journal of Forensic Sciences
- Clinical Toxicology
- Forensic Science International
- Forensic Science International. Genetics
- Forensic Science, Medicine, and Pathology
- Human & Experimental Toxicology
- Intl J of Clin. Pharm., Therapy, & Toxicology
- Journal of Analytical Toxicology
- Journal of Chromatography A
- Journal of Chromatography B
- Journal of Clinical Forensic Medicine
- Journal of Forensic and Legal Medicine
- Journal of Forensic Medicine
- Journal of Forensic Sciences
- Journal of Studies on Alcohol
- Journal of Toxicology / Clinical Toxicology
- Legal Medicine
- Quarterly Journal of Studies on Alcohol
- Science & Justice
- Toxicology
- Veterinary and Human Toxicology

So let's go over some of the primary tools and techniques offered by this database. The arrows in the screenshot (next page) of PubMed's main page indicate the areas that will be discussed in the remaining sections of this column: Main search box, Single Citation Matcher, Journal Database, and My NCBI.

Searching PubMed: just like Google or any other search engine, simply enter your search terms into the main search box, hit "search," and examine your results. The primary thing to remember when searching in PubMed is that PubMed does not search the full text of the articles in the database – just the terms used to describe the article. Virtually every single article in PubMed has been read by an Indexer, and this person assigns keywords to the article based on the content. So you are searching the keywords (although this includes the complete text of the article's abstract). As you type in your search terms, PubMed will prompt you with suggestions, making it more likely that you will receive relevant results.

See (next page) the type of record you will get for nearly any article. Much of the information pertaining to the article itself is self-explanatory, but let's go over some of the added features:

First, off to the right side of the page, notice at the top a link that will take you directly to the journal's website where you can, if desired, purchase the article.

Just below that journal link, notice the "**Related Citations**" section. PubMed has provided other articles that it considers to be related to the primary article, and they are often very good choices. Generally 3-5 articles are shown, but make sure that you click on the "See all" link below the articles to view the complete list.

And notice the drop-down box under the "**Send to:**" link (see image next page). From here, you can send the citation to a text file (to save it for later use), add it to a Collection (see the **My NCBI** section later in this column), email the citation, etc.

TECHNICAL NOTES

TOXICOLOGY RESEARCH (CONTINUED)

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J Forensic Sci., 2008 Sep;53(5):1174-7. Epub 2008 Jul 4.

Unusual suicide with a chainsaw.

Tournel G, Dédouit F, Balgairies A, Houssaye C, De Angeli B, Bécart-Robert A, Pety N, Hédouin V, Gosset D.
Faculté de Médecine de Lille, Institut de Médecine Légale et Sociale, 59045 Lille Cedex, France. gilles.tournel@univ-lille2.fr

Abstract
Described here is a case of suicide with the use of a chainsaw. A female suffering from schizophrenia committed suicide by an ingenious use of a chainsaw that resulted in the transection of her cervical spine and spinal cord. The findings of the resulting investigation are described and the mechanism of suicides with the use of a chainsaw is reviewed. A dry bone study was realized to determine the bone sections, the correlation between anatomic lesions and characteristics of chainsaw. The damage of organs and soft tissues is compared according to the kinds of chainsaw used.

PMID: 18624895 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms

LinkOut - more resources

Related citations

Unusual suicides of young women with tentative cuts and fatal neck injuries b [Forensic Sci Int. 2009]

Suicide by a circular saw. [Forensic Sci Int. 2008]

Review Unusual suicides with band saws: two case reports and a literature review [Forensic Sci Int. 2009]

Suicide by tapestry needle. [J Forensic Leg Med. 2007]

Review Cervical spine injuries in children: attention to radiographic differences [Semin Pediatr Neurol. 2009]

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★ Did you mean: **unusual suicide chain saw** (2 items)

J Forensic Sci., 2008 Sep;53(5):1174-7. Epub 2008 Jul 4.

Unusual suicide with a chainsaw.

Tournel G, Dédouit F, Balgairies A, Houssaye C, De Angeli B, Bécart-Robert A, Pety N, Hédouin V, Gosset D.
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PMID: 18624895 [PubMed - indexed for MEDLINE]

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Suicide by tapestry needle. [J Forensic Leg Med. 2007]

Review Cervical spine injuries in children: attention to radiographic differences [Semin Pediatr Neurol. 2009]

See reviews... See all...

TECHNICAL NOTES

TOXICOLOGY RESEARCH (CONTINUED)

Single Citation Matcher: this is just a fantastic tool that allows you to input however much (or little) information you might have about a reference and, if it's indexed, it will give you the result. Or, just type in an author's name to see everything she/he has published. Or enter the name of the journal and a word in the "**Title words**" box to see if anything has been published in that journal on that particular topic. As you type in the "Journal" or "Author name" boxes, PubMed prompts you so that you can select the exact name you want. Play around with this tool a bit and you'll be hooked.

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Volume: Issue: First page:

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Only as first author Only as last author

Title words:

Citation Sensor: This is really just a shortcut for looking up a citation record, rather than using the Single Citation Matcher. In lists of bibliographic references, you're often given just the bare-bones of the citation. For ex: **Exp. Clin. Endocrinol. 85: 245, 1985.** You could go to the Single Citation Matcher and plug in each element, but PubMed is very good at parsing the various parts of a citation. So just plug in the entire line right into the main page search box, and you'll get the following:

Exp Clin Endocrinol. 1985 Apr;85(2):245-8.

Plasma oxytocin concentrations in man after different routes of administration of synthetic oxytocin.

Landgraf R.

Abstract

Plasma oxytocin was determined by RIA in three male subjects under basal conditions and following administration of synthetic oxytocin. As compared to basal levels (below 10 pg/ml), plasma oxytocin was found to be elevated markedly (36 to 85 pg/ml) in response to application by nasal spray (total dose: 65 to 100 micrograms). Intramuscular injection (25 micrograms) resulted in very high oxytocin levels (360 to 480 pg/ml), whereas buccal administration (70 micrograms) was proved to be ineffective (levels below 10 pg/ml plasma). In each case, plasma vasopressin remained unchanged.

PMID: 4018162 [PubMed - indexed for MEDLINE]

Journals database: This is a very useful tool for figuring out the abbreviations that are commonly used in references and citations, and for finding information about the journal itself: the start/end date of publication, the publisher, changes to the journal title over the years, etc.

I was once asked to retrieve the following article:

Arch Toxicol 2004 Nov; 78(11): 617-28

I felt sure that the journal in question was **Archives of Toxicology** and promptly went scurrying through the stacks of my local university library in search of the title...and found nothing. Had I entered **Arch Toxicol** into the Journals Database, I would have quickly learned that the journal was not **Archives of Toxicology** but rather the **Archiv für Toxikologie** – which is not quite the same thing! Abbreviations are quite often very non-intuitive, and the Journals Database is a very handy tool to have.

My NCBI: This is your own personalized space where you can create and save information about searches that you have conducted. Yes, they could have come up with a better acronym (it stands for National Center for Biotechnology Information), but it is a terrific feature that almost nobody utilizes. If you do literature searches on a variety of subjects, this is an invaluable tool as it allows you to group your searches by topic and to access these groups from any computer.

You must first register. It's free, and simple...basically providing your email address and a password. Just click on the "My NCBI" link at the top right side of the page, and follow the prompts.

Once you're registered with your own account, go ahead and run your searches. When you come to a page of citations that interest you:

- Check the box next to the citations you want to save
- Click on the "**Sent to**" link (discussed earlier in this column)

- Choose "**Collections**", then "**Add to Collections**"
- Name your new collection, then click "**Save**"

And that's it. Now, whenever you click on the "My NCBI" link, you'll see the list of collections that you've created.

I'd recommend just taking one feature at a time and play around with it until you get comfortable using it. There are enough other features of PubMed for many other columns, but the ones discussed here are easy to use and will absolutely enhance your searching efforts. I'll make librarians out of you yet!

Jeff Teitelbaum

October 8, 2010

Jeff.Teitelbaum@wsp.wa.gov

TECHNICAL NOTES

SCRAM AND THE SCIENCE OF TRANSDERMAL ALCOHOL TESTING

(Secure Continuous Remote Alcohol Monitor—is the product of Alcohol Monitoring Systems of Littleton, Colorado)

Submitted by *J. Robert Zettl, MPA*

Introduction and Background

Alcohol (ethyl or ethanol) in biological specimens (blood, breath and urine) is perhaps the most frequently performed analysis in forensic sciences. It is not surprising that many analytical approaches and hundreds of modifications in methodology have been published regarding Blood Alcohol Concentration (BAC). Alcohol testing methods may be classified as chemical, biochemical, and gas chromatographic, or may fall under other categories such as perspiration.

Alcohol intoxication for legal purposes cannot be readily judged on the basis of the amount of alcohol a person has ingested since the exact quantities and times of ingestion are not generally known as well as other factors such as body weight, rate of absorption, and elimination. Alcohol in blood is in dynamic equilibrium with the alcohol present in the brain affecting a person's ability to function; hence a BAC is the most convenient and reliable indicator of intoxication.

After ingestion, absorption and then distribution via the circulatory system alcohol is eliminated from the body by two mechanisms: metabolism and excretion. Metabolism accounts for the removal of more than 90% of the alcohol consumed. The remaining alcohol is excreted unchanged wherever water is removed from the body, such as via breath, urine, perspiration, and saliva.

Excretion accounts for less than 10% of the eliminated alcohol however it is significant because unaltered excreted alcohol permits its measurement using skin perspiration analysis. Sensible perspiration is the sweat in the liquid phase and insensible perspiration is the vapor phase. Insensible perspiration alcohol concentration can also be called transdermal alcohol concentration (TAC), since the testing process uses alcohol vapor that escapes through the skin.

A Closer Look at Insensible Perspiration

Transdermal alcohol testing is one method that can be used to detect and quantify the presence of ethyl alcohol in human subjects through the use of an external, non-invasive detection device attached to the skin. Literally translated, the

word "transdermal" means "transfer through the skin/dermis". Transdermal alcohol measurement is the quantification of alcohol from a vapor after it passes through the skin.

Transdermal alcohol research began over 70 years ago. It is not a new science and with today's advancements in technology and microprocessor functionality a minimally invasive measurement of ethyl alcohol vapor is possible as it escapes transdermally.

Insensible Perspiration Curves

Insensible perspiration curves are very similar to typical blood alcohol curves, with the same predictive rise and fall of alcohol concentration over time.

When comparing an insensible perspiration alcohol curve to a blood or breath curve, there is a positive shift in time. The water concentration in the skin is very low in relationship to other organs of the body, thus alcohol migrates last through the skin, resulting in a slightly slower time to be detected – but accurate – when compared to a blood or breath alcohol curve.

When all factors affecting absorption, distribution, and elimination are considered in estimating the BAC in a given situation, the blood alcohol curve is the graphical representation of the result. Because of physiological factors, alcohol emits over a longer period from the skin. An exact explanation of why skin alcohol lags behind the generally accepted blood alcohol curve may not be known. However, transdermal readings remain at peak much longer than for other types of biological matrices. As a result, an insensible perspiration alcohol curve will be right shifted and flatter than a corresponding blood or breath alcohol curve.

In cases in which all the alcohol is taken at once or relatively large quantities are consumed over a short period of one hour or less and the person has a relatively empty stomach, the time to peak for insensible perspiration concentration will lag only a short period behind the peak blood concentration. Under these conditions, the blood alcohol concentration rises to a maximum in 30 minutes or less and then falls at a relatively constant rate that reflects the body's ability to eliminate alco-

hol. When biological factors slow absorption the peak of a blood alcohol curve and an insensible perspiration curve are also delayed, and the time for the delay to extend to zero is increased.

The point to emphasize is that insensible perspiration testing mimics the correlation of a person's blood alcohol concentration. In venues other than driving under the influence such as parole and probation, where the testing agency is generally intent on knowing that a person has consumed alcohol than they are on knowing the amount consumed or the exact absorption and peaking times.

Transdermal Alcohol Testing in Criminal Justice

Persons on probation or parole are generally prohibited from consuming alcohol and many federal, state, and local law enforcement agencies require testing to ensure that participants in those programs are alcohol-free.

Blood, Urine, and Breath Testing Methods versus a Transdermal Approach

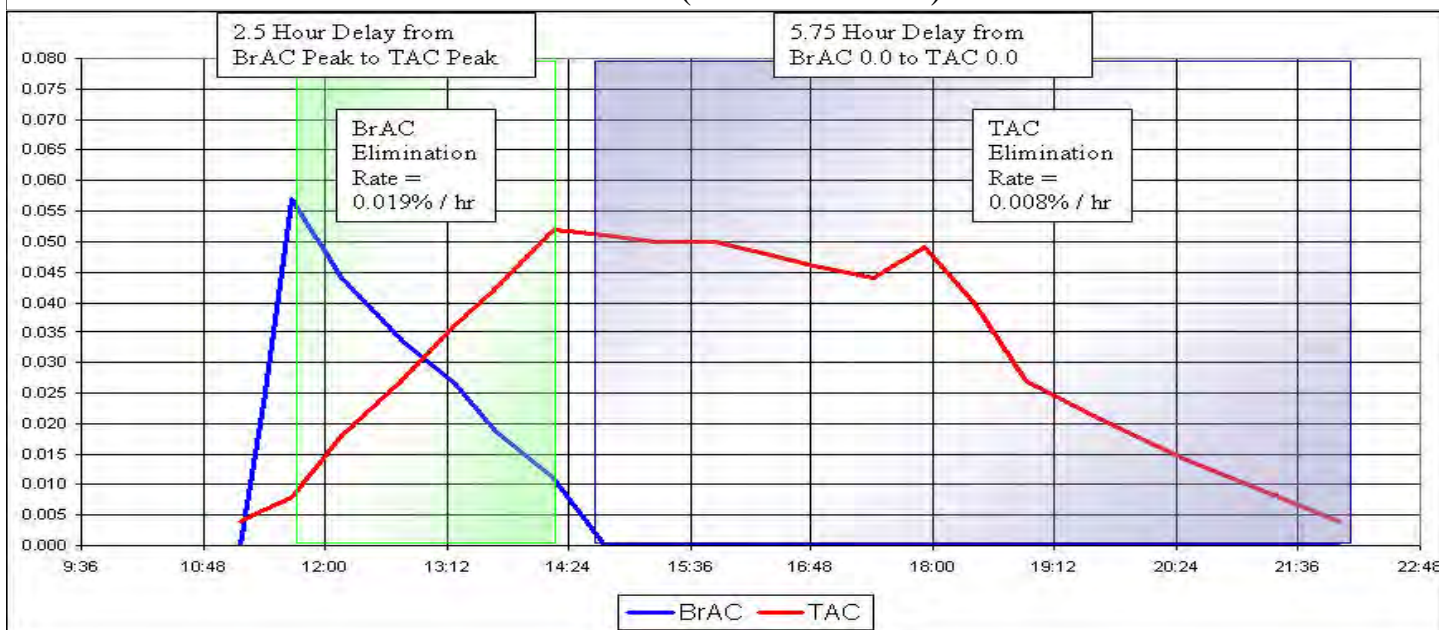
It is in the best interest of any program designed to measure alcohol in human subjects that the related testing and measurement methods and devices are accurate, reliable, and as foolproof as possible. The analysis of body fluids, such as blood and urine using Gas Chromatography and breath analysis using a variety of breath alcohol test equipment have traditionally been used to obtain a person's BAC at a specified time. However none of these traditional testing applications are able to continuously monitor a subject's BAC - 24/7.

Over the past several years, however, products using transdermal alcohol measurement to screen for alcohol consumption and estimate BAC have appeared in the marketplace. Although they may be relatively unknown compared with blood, breath, or urine testing, these transdermal-based systems can remotely and continuously monitor alcohol offenders, regardless of – whether a person is working, at home watching TV, driving, exercising, showering, or sleeping.

AMS and the Evolution of SCRAM

Alcohol Monitoring Systems, Inc. (AMS) was established in 1997 by

TECHNICAL NOTES SCRAM (CONTINUED)



individuals interested in developing an improved system for alcohol detection in forensic and correctional venues, including parole, probation, treatment clinics, motor vehicle operations, and standard criminal courts that place offenders on court-ordered alcohol abstinence.

AMS's objective was to design a device requiring no offender intervention that would have results comparable to breath alcohol testing equipment. Based on transdermal science and miniaturized fuel cell technology, AMS developed SCRAM (Secure Continuous Remote Alcohol Monitor). The SCRAM unit monitors subjects continuously, not just at specific times or days; thereby, increasing the chances of finding clients who binge drink and eliminating the ability for subjects to manipulate their drinking patterns to avoid detection.

Technical Overview of SCRAM

The SCRAM bracelet is a body-mounted testing device that uses micro-processors and a state-of-the-art fuel cell to measure ethanol migrating through the skin. The unit then stores and time and date-stamps all readings and tamper indications. Through passive intervention, the SCRAM system can take an alcohol reading as often as needed – typically every 30 minutes – without offender participation. The alcohol test results and other data are downloaded from the bracelet to a SCRAM modem at specific times or timed intervals and transmitted via existing phone lines. An AMS reviewer can moni-

tor the results at a host computer almost immediately. If there are any positives, tampers, or diagnostic or maintenance issues, the supervising agency and SCRAM service provider are notified immediately.

The SCRAM system is the eight-ounce SCRAM bracelet, which is placed securely on the subject's ankle. Once the bracelet is in place it cannot be easily removed without destroying the tamper clips. In the event that the bracelet is cut or removed in the field, the bracelet records a tamper alarm. In addition, a number of other anti-tamper features are built into the system to assure readings are from the proper subject and representative of the subject's alcohol level.

Since SCRAM is a passive device offender participation is never needed in order to obtain alcohol readings. Subjects don't know when the sampling occurs, and only the program administrator can manipulate the testing schedule.

Fuel Cell Technology

Fuel Cell Technology Background

SCRAM's analytical measurement system is Fuel Cell based. Fuel cell technology is used worldwide in a variety of breath alcohol devices for testing drivers who have violated DUI laws. The technology is also used in instrumentation approved by the Department of Transportation for determining alcohol involvement in air, sea, rail, trucking and other transportation venues. Fuel cell technology is relied

upon in numerous products included in the National Highway Traffic Safety Administration's Conforming Products List.

The SCRAM System

The SCRAM device collects data which is then analyzed according to criteria established by AMS. Potential events that meet criteria are then flagged for review by a trained technician.

The SCRAM system components and features include: the Bracelet which houses the fuel cell and other electronic components and the Modem which receives stored data from the bracelet's memory chip via wireless radio frequency transmission.

- No collection of body fluids
- No waiting for laboratory tests
- Continuous 24/7/365 monitoring and remote data collection from any location
- Passive participation – no subject intervention required
- Easy, secure access – monitoring authority has direct access to each subject's data
- Single-source admissibility – no additional tests required to verify confirmed violations
- Scientifically and legally acceptable accuracy rates (false positive rates are less than 0.1%)

TECHNICAL NOTES

SCRAM (CONTINUED)

SCRAM Research*Michigan Department of Corrections*

Beginning in 2002, the Michigan Department of Corrections (MDOC) began testing the SCRAM bracelet on offenders. MDOC personnel affirmed that the "SCRAM System clearly meets the primary objective of accurately measuring alcohol consumption." They also confirmed that comparisons between TAC and BrAC measurements were accurate.

University of Washington

In a University of Washington study, researchers developed and used a mathematical model of ethanol transport through the skin to determine key factors that govern the relationships between the BAC vs Time curve and the TAC vs Time curve. When the model output data were qualitatively compared to actual study data they found that the peak TAC was lower than the peak BAC and the TAC curve was right shifted with peak delays of between 30 and 90 minutes.

University of Colorado

Research using the SCRAM bracelet was conducted at the University of Colorado in 2005 by Sakai, et. al. from the Department of Psychiatry, Division of Substance Dependence, University of Colorado School of Medicine. The research was performed in both a controlled laboratory environment and a community environment. Consistent with previous research, researchers concluded that the TAC curve is right-shifted from the BrAC curve, and that transdermal peaks occurred later and were lower. They found no false positives. Through comparative analysis of BrAC results and TAC results, the study concluded that individual TAC results cannot be considered quantitatively equivalent to simultaneously obtained breath results, suggesting that transdermal testing is not a direct replacement for breath testing equipment.

As for applications of transdermal technology, the researchers concluded that although individual readings from the device cannot be considered equivalent to simultaneous blood alcohol concentrations,

the device provides meaningful information about relative alcohol concentrations. In criminal justice programs, the device could be used as a method to qualitatively identify drinking episodes, to monitor drinking among alcohol dependent offenders to reduce recidivism, and to identify individuals in need of treatment. However, the device should not be used to approximate simultaneous blood alcohol concentrations such as used in charging an individual with driving under the influence.

National Highway Traffic Safety Administration

The latest research done using the SCRAM bracelet was conducted by the National Highway Traffic Safety Administration (NHTSA) in 2006. This research was conducted in both a controlled laboratory environment and a community environment. The researchers concluded, "There is no doubt that the transdermal concept is valid as long as expectations of quantitative parity with BAC are moderated." The researchers also reconfirmed that the TAC curve is right-shifted from the BrAC curve and that transdermal peaks occur later and are lower. As with previous research, they found "no false positives of any note." The NHTSA researchers also looked at the possibility of circumventing the SCRAM bracelet. They observed, "It seems unlikely that circumvention by obstruction can constitute a real threat to the integrity of this system while drinking."

Transdermal Alcohol Testing – Scientific Consensus

In summation, the prevailing scientific consensus is that transdermal alcohol measurement has a scientific foundation that dates back 70 years. Since that time researchers have conducted significant transdermal alcohol testing studies using diverse research techniques with very consistent results, including findings from the contemporary studies and SCRAM reviews featured in this evaluation. Based on the published literature overall, one must conclude that:

1. Ethanol is excreted through the skin in sufficient quantities to estimate BAC.
2. Those who have not consumed alcohol do not produce signals that can be

interpreted as a transdermal alcohol curve.

3. TAC is correlated with BAC in both magnitude and shape of the alcohol curve.
4. The TAC alcohol curve is right shifted from the BrAC alcohol curve and takes longer to reach zero.
5. Measuring TAC on a constant basis provides an effective screen for alcohol consumption and an approximation of the magnitude of that consumption.

SCRAM and Breathalyzer Comparative Testing

AMS conducted extensive research to compare the accuracy of readings using the AMS SCRAM bracelet to alcohol concentrations measured by conventional breath analysis. This research was accomplished by establishing a series of objective scientific protocols to ensure that the SCRAM unit would first detect and semi-quantitate transdermal alcohol when compared to blood or breath alcohol concentrations in human subjects.

Hundreds of SCRAM tests were conducted in 2000 and 2001, resulting in modifications to the prototype SCRAM units. Modifications were made to enhance the SCRAM's precision and accuracy, comfort and wearability, communication software and data links, detector clearance, and permeability to water.

Conclusion

Overall, a permanently body-mounted transdermal testing device, such as SCRAM, shows an excellent correlation between a subject's blood alcohol test and TAC. The advent of new, improved micro-processors and mini electronic chips and circuits make the production of a wearable, 24/7 device practical. This allows for continual, effective alcohol testing while the subject maintains a normal routine, and assures supervised authority that subjects are alcohol-free at all times.

Acknowledgments

The author would like to thank Mr. Jeffrey Hawthorne, for his input and advice and who was most valuable in providing the majority of the SCRAM device information.

NATIONAL ISSUES

Leahy To Introduce Forensics Reform Legislation In New Congress

WASHINGTON (Friday, Dec. 17, 2010) – Senate Judiciary Committee Chairman Patrick Leahy (D-Vt.) Friday announced his intent to introduce legislation in January to strengthen the criminal justice system by reforming forensic science in laboratories across the country. Leahy chaired hearings in the 111th Congress to examine serious issues in forensic science and the reliability of such evidence in the criminal justice system.

**Statement Of
Senator Patrick Leahy (D-Vt.),
Chairman,
Senate Judiciary Committee,
On Legislative Proposals For
Forensics Reform
December 17, 2010**

For nearly two years, the Senate Judiciary Committee has been examining serious issues in forensic science that go to the heart of our criminal justice system. The Committee has studied the problem exhaustively, and we reached out to a wide array of experts and stakeholders. While the days of the 111th Congress are drawing to a close, it is my intention to introduce legislation early next year that represents the culmination of this process. That legislation will strengthen our confidence in the criminal justice system and the evidence it relies upon by ensuring that forensic evidence and testimony is accurate, credible, and scientifically grounded.

In February of 2009, the National Academy of Science (NAS) published a report asserting that the field of forensic science has significant problems that must be urgently addressed. The report suggested that basic research establishing the scientific validity of many forensic science disciplines has never been done in a comprehensive way. It also suggested that the forensic sciences lack uniform and unassailable standards governing the

accreditation of laboratories, the certification of forensic practitioners, and the testing and analysis of evidence. Indeed, I was disturbed to learn about still more cases in which innocent people may have been convicted, perhaps even executed, in part due to faulty forensic evidence.

Since then, the Judiciary Committee has held a pair of hearing on the issue. Committee members, as well as staff, have spent countless hours talking to prosecutors, defense attorneys, law enforcement officers, judges, forensic practitioners, scientists, academic experts, and many, many others to learn as much as we can about what is happening now and what needs to be done. Through the course of this inquiry, we discussed some of the current problems in forensic science that we need to address. But it also became abundantly clear that the men and women who test and analyze forensic evidence do great work that is vital to our criminal justice system. Accordingly, as a former prosecutor, I am committed to strengthening the field of forensics, and the justice system's confidence in it, so that their hard work can be consistently relied upon, as it should be.

While there were varying responses to the findings of the NAS report, one thing was clear: there needed to be a searching review of the state of forensic science work in this country. And it also became clear through this process that there is widespread consensus about the need for change and the kind of change that is needed. Almost everyone I heard from recognized the need for strong and unassailable research to test and establish the validity of the forensic disciplines, as well as the need for consistent and rigorous accreditation and certification standards in the field.

Prosecutors and law enforcement officers want evidence that can be relied upon as definitively as possible

to determine guilt and prove it in a court of law. Defense attorneys want strong evidence that can as definitively as possible exclude innocent people. Forensic practitioners want their work to have as much certainty as possible and to be given deserved deference. All scientists and all attorneys who care about these issues want the science that is admitted as evidence in the courtroom to match the science that is proven through rigorous testing and research in the laboratory.

Everyone who cares about forensics also recognizes that there is a dire need for well managed and appropriately directed funding for research, development, training, and technical assistance. It is a good investment, as it will lead to fewer trials and appeals and reduce crime by ensuring that those who commit serious offenses are promptly captured and convicted.

The legislation I intend to introduce next year will address these widely recognized needs. Among other things, it will require that all forensic science laboratories that receive federal funding or federal business be accredited according to rigorous and uniform standards. It will require that all relevant personnel who perform forensic work for any laboratory or agency that gets federal money become certified in their fields, which will mean meeting standards in proficiency, education, and training.

I expect that the proposal will set up a rigorous process to determine the most serious needs for peer-reviewed research in the forensic science disciplines and will set up grant programs to fund that research. The bill will also provide for this research to lead to appropriate standards and best practices in each discipline. It will also fund research into new technologies and techniques that will allow forensic testing to be done more quickly, more efficiently, and more accurately. I believe these are proposals that will be widely supported by those on all sides of this issue.

NATIONAL ISSUES—LEAHY (CONTINUED)

The bill that I will introduce will seek to balance carefully a number of competing considerations that are so important to getting a review of forensic science right. It will capitalize on existing expertise and structures, rather than calling for the creation of a costly new agency. And ultimately, improved forensic science will save money, reduce the number of costly appeals, shorten investigations and trials, and help to eliminate wrongful imprisonments.

I understand that sweeping forensic reform and criminal justice reform legislation not only should, but

must, be bipartisan. There is no reason for a partisan divide on this issue; fixing this problem does not advance prosecutors or defendants, liberals or conservatives, but justice. I have worked closely with interested Republican Senators on this vital issue. I hope that many Republican Senators will join me in introducing important forensics reform legislation at the beginning of the next Congress, and I will continue to work diligently with Senators on both sides of the aisle to ensure that this becomes the consensus bipartisan legislation that it ought to be.

I want to thank the forensic science practitioners, experts, advocates, law enforcement personnel, judges, and so many others whose input forms the basis for the legislation I will propose. Their passion for this issue and for getting it right gives me confidence that we will work together successfully to make much needed progress.

I hope all Senators will join me next year in advancing important legislation to restore confidence to the forensic sciences and the criminal justice system.

SCIENTIFIC WORKING GROUP FOR FORENSIC TOXICOLOGY—SWGTOX

Submitted by Robert Middleberg, Ph.D., DABFT

The SWGTOX has been on the move ... in many ways. There has been a great deal of activity revolving around the mission of SWGTOX, i.e. to investigate, analyze, develop and disseminate consensus in standards of practice for forensic toxicology. Members, advisors, consultants and invited guests have been busy developing work product in the broad areas of Standards, Practice, Protocols and Accreditation; Education, Ethics, Outreach and Certification; and Research, Development, Testing and Evaluation. From these broad areas, smaller subcommittees and task groups have been developed to make the process more manageable. The ultimate goal is for each area to have standard of practice documents for forensic toxicology. This is the goal not only of SWGTOX but similarly for the given discipline represented by the eighteen currently existing SWGs in the forensic sciences.

Besides communication via email and teleconference, a meeting of all Members was held Dec. 14-16, 2010 at the National Conference Center in Lansdowne, VA. This meeting was generously supported and funded by the National Institute of Justice. SWGTOX is also indebted to Dr.

Marc LeBeau for organizing the meeting. Remarkably, all but three of the thirty-five SWGTOX Members attended this meeting, especially given its closeness to the Holiday Season – a clear demonstration of the dedication of these individuals to the SWGTOX mission. Unfortunately, advisors, consultants and invited guests could not be included in this meeting due to funding limitations.

An incredible amount of activity and business was conducted at this meeting and each individual contributed significantly. Of note, with significant discussion and rewrite, discussion and rewrite, discussion and rewrite, etc., SWGTOX Bylaws were enacted, which are available at the working group's website (www.swgtox.org). Additionally, a Code of Professional Conduct for SWGTOX was developed and approved. This, too, can be found on the website.

In the Bylaws, it should be noted that SWGTOX work product documents will go through an approval process that includes a 60-day public comment period. It is important that the community at large be given an opportunity to review and comment as these documents will in-

fluence the practice of forensic toxicology in the United States. Additionally, areas of toxicology not traditionally covered by other regulating bodies will be included in the SWGTOX mission, e.g. parole and probation. The end work product documents will be dynamic in respect to annual review and modification when necessary, thus preserving the integrity and continuation of SWGTOX. While somewhat of a herculean task, by dividing and conquering, and utilizing representatives of the community at large, the SWGTOX Co-Chairs are confident that a final total work product will be significant in addressing issues raised in the NAS report on Forensic Sciences, as well as meeting the needs of the field in general.

Lastly, we would like to thank **Gina McVicker** of the FBI for her assistance during the last SWGTOX meeting. Her assistance was invaluable to all SWGTOX meeting attendees.

NOTICE:
SWGTOX has a new website ...
www.SWGTOX.org



TOXICOLOGY - BITS & PIECES

Section Editor, **J. Robert Zettl**, MPA (*jrzettl1@msn.com*)

AAFS - TOX SECTION NEWS
 Submitted by **Ruth Winecker, Ph.D.**
 Program Chair (*winecker@ocme.unc.edu*)

AAFS/ SOFT JOINT DRUGS & DRIVING COMMITTEE
 Submitted by **Jennifer Limoges, M.S.**
 Committee Chair

The program for the 2011 AAFS meeting in Chicago, Illinois has been finalized and it's hard to believe that the meeting is just around the corner. The program committee is very pleased to provide you with a jam-packed educational conference that we hope you will find interesting and enlightening.

Workshop chair, **Loralie Langman**, (*langman.loralie@mayo.edu*) was able to recruit two workshop proposals for the toxicology section and both were approved for the final program. AAFS will offer a total of 22 workshops that were selected from almost double that number of submissions. On Monday, a half day workshop (W#1): "Tips and Tricks to Improve the Interpretive Value of Post Mortem Toxicology" will be co-chaired by **Michele Merves** and **Jayne Thatcher**. On Tuesday, a full day workshop (W#18): "K2 and Beyond: A Synthetic Cannabinoid Primer" is co-chaired by **Sherri Kacinko** and **Lindsay Reinhold**.

On Wednesday evening, a poster session will immediately follow the rewards reception to honor this year's awardees. Please join me in congratulating **Michelle Merves** who will receive the Irving Sunshine Award and **Daniel Anderson** who will receive the Ray Abernathy Award.

Thursday morning will begin two full days of scientific presentations and morning sessions will feature papers on New Drugs, Methods, and Uncertainty. Following lunch there will be a special update on SWG-TOX activities and the remainder of the day will be devoted to a Drugs and Driving Special Session. The day's activities will wrap-up with the always popular open forum.

Friday morning will be devoted to platform presentations featuring postmortem toxicology as part of a joint session with Pathology/Biology. The annual lectureship in toxicology will feature Pulitzer Prize winning science writer **Deborah Blum** who will entertain and educate with a literary history of modern day toxicology beginnings. Closing the scientific session is a special group of presentations featuring postmortem pediatric toxicology cases.

Finally, I would like to encourage all current or future AAFS toxicology section members to attend next year's meeting in Chicago. These are important times, and changes to how we practice forensic science are on the way! Therefore, it is important to interact with colleagues from all forensic disciplines and this is the one meeting a year where you have this opportunity. As toxicologists, we need to be proactive, involved and leading the charge when these changes start happening.

The SOFT/AAFS Drugs & Driving Committee will be sponsoring a Special Session at the upcoming AAFS meeting on Thursday afternoon (2/24), coordinated by **Laura Liddicoat**. Topics include the National Roadside Survey, DRUID Project, and drug studies on Oxycodone, Hydrocodone, Tizanidine, and Synthetic Cannabinoids. The committee meeting will be on Wednesday (2/23) at 12:00 pm. Don't forget to check out the Drugs & Driving portion of the new SOFT website.

Happy Holidays!

**NATIONAL SAFETY COUNCIL,
 HIGHWAY TRAFFIC
 SAFETY DIVISION,
 COMMITTEE ON
 ALCOHOL AND OTHER DRUGS**
 Submitted by **Laura Liddicoat, B.S.**,
 NSC Secretary

The last meeting of the NSC Executive Board was held at the SOFT annual meeting on Friday, October 22. The Executive Board is pleased to announce that Dr. **Barry K. Logan** will be the next recipient of the Robert F. Borkenstein Award. This distinguished honor will be presented at a banquet and ceremony to be held at the annual AAFS meeting next February in Chicago.

The individual receiving the Borkenstein award is one who has a minimum tenure of 25 years of active service in the area of alcohol/drugs and traffic safety, has contributed to that field to a degree that their achievements are nationally recognized and has a minimum of 10 years of active and productive involvement as a volunteer with the National Safety Council.

To access the CAOD policies, previous Borkenstein Award recipients or learn more about the committee go to www.nsc.org and type in Committee on Alcohol and Other Drugs under the search engine.

ABFT NEWS

Submitted by *Daniel S. Isenschmid, Ph.,D., D-ABFT, ABFT Secretary*

The annual ABFT Certificant ceremony and reception was held during the Society of Forensic Toxicologists meeting in Richmond, VA. Certificants gathered at the ceremony remembered Dr. Robert Cravey, the second President of the ABFT who died on October 16, 2010, just three days earlier. Following a toast to his memory, President Stajic introduced six new certificants that successfully met all the requirements for ABFT certification.

Congratulations to new Diplomates:

- Jennifer Collins, PhD
- Leslie Edinboro, PhD

Congratulations to new Forensic Toxicology Specialists:

- Steven Fleming, BS
- Judith Keen, MS
- Scott Larson, MS
- Sara Schreiber, BS



The list of ABFT-accredited laboratory continues to grow. The 26 forensic toxicology laboratories currently accredited are listed by institution below:

- AIT Laboratories, Indianapolis, IN
- Albany Medical Center, Albany, NY
- Alberta Medical Examiner's Office, Edmonton, AB (Canada)
- Bexar Country Medical Examiner's Office, San Antonio, TX
- Civil Aerospace Medical Institute, Oklahoma City, OK
- County of San Diego Medical Examiner's Office, San Diego, CA
- Erie County Medical Examiner's Office, Buffalo, NY
- Federal Bureau of Investigation, Laboratory Division, Quantico, VA
- Franklin County Coroner's Office, Columbus, OH
- Harris County Medical Examiner, Houston, TX
- Maricopa County Office of the Medical Examiner, Phoenix, AZ
- Maryland Office of the Chief Medical Examiner, Baltimore, MD
- Monroe Country Medical Examiner's Office, Rochester, NY
- Montana Forensic Science Division, Missoula, MT
- New Mexico Dept. of Health, Scientific Laboratory Division, Albuquerque, NM
- NMS Labs, Willow Grove, PA
- Office of Chief Medical Examiner, City of New York, New York, NY
- Office of the Armed Forces Medical Examiner, Rockville, MD
- Office of the Chief Medical Examiner, State of Oklahoma, Oklahoma City, OK
- Office of the Medical Examiner of Travis County, Austin, TX
- Office of the Wayne County Medical Examiner, Detroit, MI
- Suffolk County Medical Examiner's Office, Hauppauge, NY
- UMass Memorial Medical Center, Worcester, MA
- Washington State Patrol Toxicology Laboratory, Seattle, WA
- Westchester County Division of Forensic Services, Valhalla, NY
- Wisconsin State Laboratory of Hygiene, Madison, WI

DEA TO TEMPORARILY PLACE FIVE SYNTHETIC CANNABINOIDS INTO A SCHEDULE I CATEGORY

Federal Register: November 24, 2010
(Volume 75, Number 226)

[Proposed Rules]

[Page 71635-71638]

From the Federal Register Online via
GPO Access [wais.access.gpo.gov]
[DOCID:fr24no10-45]

DEPARTMENT OF JUSTICE
Drug Enforcement Administration

21 CFR Part 1308

[Docket No. DEA-345N]

Schedules of Controlled Substances:

Temporary Placement of Five Synthetic Cannabinoids Into Schedule I

AGENCY: Drug Enforcement Administration (DEA), U.S. Dept. of Justice.

ACTION: Notice of Intent.

SUMMARY: The Deputy Administrator of the Drug Enforcement

Administration (DEA) is issuing this notice of intent to temporarily place five synthetic cannabinoids into the Controlled Substances Act (CSA) pursuant to the temporary scheduling provisions under 21 U.S.C. 811(h) of the CSA. The substances are:

- 1-pentyl-3-(1-naphthoyl)indole (JWH-018),
- 1-butyl-3-(1-naphthoyl)indole (JWH-073),
- 1-[2-(4-morpholinyl)ethyl]-3-(1-naphthoyl)indole (JWH-200),
- 5-(1,1-dimethylheptyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol (CP-47,497), and
- 5-(1,1-dimethyloctyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol (cannabicyclohexanol; CP-47,497 C8 homologue).

[[Page 71636]]

This intended action is based on a finding by the DEA Deputy Administrator that the placement of these synthetic cannabinoids into Schedule I of the CSA is necessary to avoid an imminent hazard to the public safety. Finalization of this action will impose criminal sanctions and regulatory controls of Schedule I substances under the CSA on the manufacture, distribution, possession, importation, and exportation of these synthetic cannabinoids.

FOR FURTHER INFORMATION CONTACT:

Christine A. Sannerud, Ph.D., Chief, Drug and Chemical Evaluation Section, Office of Diversion Control, Drug Enforcement Administration, 8701 Morrissette Drive, Springfield, VA 22152, Telephone (202) 307-7183
E-mail: ode@dea.usdoj.gov

MEMBER NEWS

IN MEMORIAM—ROBERT H. CRAVEY—OCTOBER 16, 2010

Robert Harold Cravey was born in Rhine, Georgia on October 23, 1925 and died October 16, 2010. He attended high school and college in Georgia, graduating from the University of Georgia with a bachelor's degree in chemistry in 1949. He worked as a microbiologist with the Georgia State Health Department and later the U.S. Public Health Service for several years. In 1955 he was called to active duty in the U.S. Air Force and was stationed at several base hospitals in the U.S. and abroad as a Clinical Laboratory Officer, until being assigned to the Armed Forces Institute of Pathology in Washington, DC, in 1962 for specialized training. There he spent 3 years under the tutelage of Dr. Leo Goldbaum as a forensic toxicologist. Shortly thereafter, he joined the newly-formed Laboratory of Criminalistics at the Orange County, California, Sheriff-Coroner's Office in Santa Ana as Chief



Toxicologist. He remained in that position until his retirement in 1992.

Bob was very active in forensic toxicology, serving on numerous boards and committees of several professional societies.

Among his more notable achievements, he was on the editorial boards of both the *Journal of Forensic Science* and the *Journal of Analytical Toxicology*, was a director of the American Board of Forensic Toxicology and Society of Forensic Toxicologists, chairman of the Toxicology Section for both the American Academy of Forensic Sciences and the International Association of Forensic Sciences, vice-president of the American Academy of Forensic Sciences and president of the

California Association of Toxicologists and Forensic Sciences Foundation. He published over 60 scientific articles, authored more than a dozen book chapters and was co-author of 5 books, including *Courtroom Toxicology*, *Disposition of Toxic Drugs and Chemicals in Man* and *Introduction to Forensic Toxicology*.

Bob will be remembered by his colleagues and close friends for his quiet, unassuming manner and his genuine interest in their activities and personal well-being. He was a humble man who treated everyone with respect and who always spoke well of his peers. Those of us who studied under him have greatly appreciated his professional encouragement and support, which continued for many years after we left his immediate circle. He was a friend to all, giving selflessly of his time and knowledge, asking nothing in return. He will be sorely missed.

Submitted by Randall C. Baselt

IN MEMORIAM—DELMIRO A. (TONY) VAZQUEZ—OCTOBER 3, 2010

Delmiro A. (Tony) Vazquez died unexpectedly October 3, 2010. He is survived by his wife Eva of 50 years, daughter Wendy, son James and wife Karen, and grandchildren Alex, Jennifer and Anthony. Tony was an engineering student when he emigrated from Cuba in the late 1950's and subsequently graduated the University of Miami with a degree in Medical Technology and Chemistry. He worked at the University of Miami Medical School and then for over 30 years at Cedars Medical Center where he was Technical Director of the Laboratory.

Tony had the ability to acquire both the knowledge and the staff to develop new techniques and procedures for the laboratory at Cedars. The laboratory was one of the

first to offer flow cytometric analysis of T cell populations for clinical evaluation of HIV patients. He developed a full service toxicology laboratory with clientele including government agencies, police and firefighters. Tony was instrumental in the development of one of the first in-hospital Outreach Laboratory programs for physician's offices. His knowledge of the market, clients and keen business acumen made Consulab successful for many years.

In addition to co-authoring numerous papers, presentations, and lecturing in the United States, Mexico, and Latin America, he was working with the University Of Miami School Of Medicine in Andrology research at the time of his death.

Tony was a member of American Chemical Society, AACC, American Association of Bioanalysts, and SOFT. He served as an inspector for NLCP and was a member of the Instrument Resource Committee of the College of American Pathologists for many years.

Tony will be remembered for his honesty, integrity, and intelligence but also for his sense of humor. As his favorite story goes, when he came to the United States, he asked in broken English about getting a "green card" and he swore they handed him an American Express. The name Delmiro means distinguished nobility. According to All Baby Names, people with that name value truth, justice and discipline. That truly defined Tony Vazquez.

Submitted by Phyllis Rosenthal

MEMBER NEWS

PHOTO APPENDIX TO
TOXTALK, VOLUME 34-4

Sincere thanks is extended to **Tinsley Preston** of Preston Publications for his generous contribution of the many pictures taken at the SOFT 2010 meeting in Richmond. This “photo gallery” will be displayed in a separate Appendix to this ToxTalk, Vol. 34-4. (Photo Gallery from SOFT 2010).

Tinsley’s photographic talent is only exceeded by his kindness!

GRATEFUL THANKS TO
VICKIE WATTS

Best wishes and grateful thanks to **Vickie Watts** for her invaluable contributions as past co-Editor of the quarterly ToxTalk newsletter. She has earned the appreciation and recognition from the entire SOFT organization for her past efforts.

IACT MEETING - APRIL 18-21

The International Association for Chemical Testing will be hosting its annual meeting in St. Louis’ Chase Park Plaza Hotel, April 18-21, 2011. In addition to the standard scientific presentation program, IACT has again partnered with ASCLD-LAB to offer a laboratory accreditation preparation workshop. The 3 day course is designed to introduce accreditation to those performing breath alcohol instrument calibration activities and how to prepare a laboratory for the accreditation process. Those interested in forensic toxicology board certification will be afforded an opportunity to attend a prep workshop as well as sit for the board certification examination in forensic alcohol toxicology, offered by the Forensic Toxicology Certification Board. Further details including registration and program agenda is available on the ISCT website, www.iaconline.org.

2011 MEMBERSHIP DUES

Annual SOFT membership dues notices for 2011 will be mailed out in early January. Check payments can be returned by mail, or credit card payments can be processed through an “on-line payment” feature on the new SOFT website (www.soft-tox.org). Annual dues amounts remain unchanged (\$60 for Full / Assoc, \$15 for Students).

It is still unclear at this writing if the annual Directory will be made available in printed format or if it will only be available via the website.

NEW WEBSITE DETAILS

A new SOFT website was launched in October 2010. This new website requires each SOFT members to re-set their password. Any member who has not yet done this, please find the website (www.soft-tox.org), locate the MEMBER LOGIN area and enter a “user name” (use format jdoe for John Doe) and “password”(changeme).

The Member Directory feature is planned to re-appear in a few weeks.

The complete ToxTalk newsletter archives are also now available at the main index of the SOFT home page. SOFT members need to be logged into the website to access previous issues of ToxTalk.

A complete scientific abstract collection from past annual meetings is now available at the main index.

Using the search function at the top of the page will search most annual meeting abstracts and previous issues of ToxTalk.

NIJ SPONSORED COURSES

NIJ is sponsoring 4 upcoming courses offered by the Midwest Forensic Resource Center in Ames, Iowa:

- **Toxicology Symposium**—
January 19-21, 2011
- **Basic Bio-Metabolism for Toxicologists: Principles of Drug Pharmacokinetics**—
March 8-11, 2011
- **Advanced Bio-Metabolism for Toxicologists: Drug Pharmacokinetics and Dynamics**—
July 26-29, 2011
- **Post-Mortem Analyses in Forensic Toxicology**—
October 4-7, 2011

Learn more about each course and register on the Midwest Forensic Resource Center Website (<http://www.ameslab.gov/mfrc/training/2011-calendar>).

The MFRC is part of the U.S. Dept. of Energy’s Ames Laboratory.

2011 JOINT MEETING OF SOFT & TIAFT

*Submitted by **Nikolas Lemos, Ph.D, F.R.S.C., 2011 Meeting Host***

Welcome to San Francisco

It is a unique opportunity to jointly host both the Society of Forensic Toxicologists (SOFT) and The International Association of Forensic Toxicologists (TIAFT). Hundreds of practicing forensic toxicologists and others interested in the discipline will visit the fabulous metropolis of San Francisco, September 25 –30, 2011.

The site of the meeting is the San Francisco Marriott Marquis Hotel, towering 39 stories high into the city skyline in beautiful downtown San Francisco. Enjoy magnificent views of downtown San Francisco from a number of the 1,499 luxurious guest rooms.

Plans are underway to develop an educational and rewarding scientific program, continuing education workshop selections, and a rejuvenating social calendar to entertain all. Make plans now to participate in this extraordinary 2011 Joint SOFT-TIAFT meeting.

Host Institutes / Laboratories

Ashraf Mozayani, PhD, will be pleased to assist in identifying a host institute or laboratory in the USA if required. Please contact Dr. Mozayani (ashraf.mozayani@ifs.hctx.net) to arrange a short educational visit before or after the 2011 Joint SOFT-TIAFT Meeting. It is understood that such assistance is intended to help potential international delegates make the most of their trip to the USA, however, this is not a commitment on the part of the Organizing Committee to provide any financial support or to assist with USA Immigration matters.



Letter of Invitation

Vina R. Spiehler, PhD, TIAFT Regional Representative for the USA, will be pleased to provide an official Letter of Invitation upon request (spiehleraa@aol.com). It is understood that such an invitation is intended to help potential delegates raise travel funds or to obtain a visa, however, this is not a commitment on the part of the Organizing Committee to provide any financial support.

Events currently in their planning phase are expected to include:

- Young Toxicologists Day
- Two Full Days of Workshops
- Three Full Days of Parallel Scientific Sessions—Platform and Poster Sessions
- “**The Streets of San Francisco**” Welcoming Reception
- “**Escape To Alcatraz**” Trip
- “**Uniting Nations**” President’s Gala Dinner

Scientific Program

The 2011 Scientific Program Chair, **Marilyn A. Huestis, Ph.D.**, and our International Advisory Board are planning an exciting, educational and diverse scientific program, to include such topics as:

- Postmortem Toxicology
- Human Performance Tox.
- Analytical Techniques
- Toxicologic Interpretations
- Alcohol, Drugs & Driving
- Clinical Toxicology
- Drug Facilitated Crimes
- Alternative Bio. Specimens

Scientific Abstracts may be submitted electronically through **April 15th, 2011** for consideration as a platform or poster presentation.

Workshops Offered

The 2011 Workshops Chairs, **Dimitri Gerostamoulos, Ph.D.**, and **Laureen Marinetti, Ph.D.**, with our International Advisory Board are planning an educational and cutting edge workshop program.

Informal workshop proposals can be electronically submitted for consideration through **January 1, 2011**.

It is expected that workshops will cover basic, intermediate and advanced topics in toxicology including analysis and interpretation, pharmacology, pharmacogenetics, legal aspects of toxicology, etc. These workshops may be full day or half day schedules.

2011 JOINT MEETING OF SOFT & TIAFT (CONTINUED)

2011 Student Program

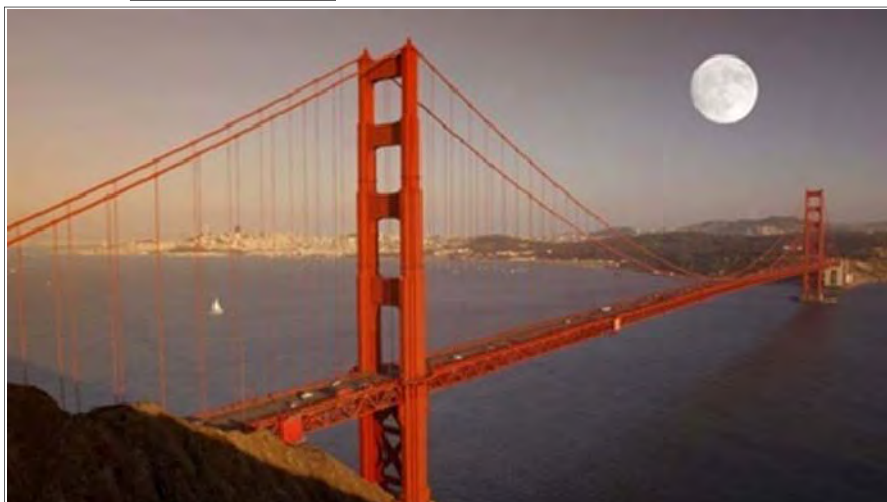
The 2011 Committee plans to develop a day-long student educational outreach program as part of the 2011 SOFT-TIAFT Meeting at the San Francisco Marriott Marquis Hotel.

This program, named the SOFT-TIAFT Student Enrichment Program (ST-SEP), will soon invite college students (undergraduate and graduate level) to participate, FREE OF CHARGE (continental breakfast and lunch included), in a one day educational program to learn about the field of forensic toxicology.

The ST-SEP day will be organized and administered by the younger toxicologists committees of SOFT and TIAFT.

The ST-SEP will only be made available to a limited number of students. The purpose of the ST-SEP is to foster education among our future forensic scientists and to give students an educational opportunity they may not otherwise experience.

The deadline for submitting an application is July 31, 2011.



2011 Planning Committee

2011 HOSTS

Nikolas P. Lemos, PhD, FRSC
Ann Marie Gordon, MA



SCIENTIFIC PROGRAM

Marilyn A. Huestis, PhD



WORKSHOPS

Dimitri Gerostamoulos, PhD
Laureen Marinetti, PhD



TREASURER

Daniel S. Isenschmid, PhD



LOCAL ARRANGEMENTS

Vina R. Spiehler, PhD



EXHIBITORS/SPONSORS

Peter R. Stout, PhD
Jeri D. Roper-Miller, PhD

Up-to-the-minute
information may be found on
the meeting website,
www.toxicology2011.com

International Advisory Board

The many individuals listed below have agreed to serve on the 2011 International Advisory Board. These individuals will be involved with many meeting decisions.

- Dan T. Anderson, MS - USA
- Robert A. Anderson, PhD - UK
- Sotiris Athanaselis, PhD - Greece
- Jochen Beyer, PhD - Australia
- Federica Bortolotti, MD, PhD - Italy
- Jennifer Button, BS - UK
- Hee-Sun Chung, PhD - Korea
- Marc Deveaux, PhD - France
- Olaf H. Drummer, PhD - Australia
- Simon Elliott, PhD - UK
- David W. Holt, PhD - UK
- Alan Wayne Jones, PhD - Sweden
- Sarah Kerrigan, PhD - USA
- Pascal Kintz, PhD - France
- Robert Kronstrad, PhD - Sweden
- Marc LeBeau, PhD - USA
- Hans H. Mauer, PhD - Germany
- Manfred R. Möller, PhD - Germany
- Christine Moore, PhD - USA
- Ashraf Mozayani, PhD - USA
- Iikka Ojanperä, PhD - Finland
- David Osselton, PhD - UK
- Anya Pierce, MBA - Ireland
- Nikolaos Raikos, MD - Greece
- Marina Stajic, PhD - USA
- Osamu Suzuki, MD, PhD - Japan
- Franco Tagliaro, MD - Italy
- Alain G. Verstraete, MD - Belgium
- Robert Wennig, PhD - Luxembourg

Society of Forensic Toxicologists, Inc.

1 N. Macdonald St., Suite 15
Mesa, AZ 85201

Toll Free Phone: 888-866-7638
Phone / Fax: 480-839-9106
E-mail: office@soft-tox.org

ToxTalk Deadlines for Contributions:

- February 1** for March Issue
- May 1** for June Issue
- August 1** for September Issue
- November 1** for December Issue

**VISIT
SAN FRANCISCO!**

SOFT 2011
www.toxicology2011.com

We're on the Web!
www.soft-tox.org

**SOFT 2011 PLANNING
COMMITTEE MEMBERS**

Hosts:

Nikolas Lemos (nikolas.lemos@sfgov.org)
Ann Marie Gordon (ann.gordon@sfgov.org)

Treasurer:

Daniel Isenschmid (pointetox@aol.com)

Workshops:

Dimitri Gerostamoulos (dimitrig@vifm.org)
Laureen Marinetti (marinettil@mcoho.org)

Scientific Program:

Marilyn Huestis
(mhuestis@intra.mida.nih.gov)

Local Arrangements:

Vina Spiehler (spiehleraa@aol.com)

Exhibitor Coordination:

Peter Stout (pstout@rti.org)
Jeri Roper-Miller (jerimiller@rti.org)

JAT Special Editor for 2011:

Jarrad Wagner (jarred.wagner@okstate.edu)

ToxTalk is the official publication of the Society of Forensic Toxicologists, Inc. It is published quarterly for its members. It is each member's responsibility to report change of address and email information to the SOFT Administrative Office. To submit articles, address and email changes, please email to ToxTalk@soft-tox.org.

Future S.O.F.T. Meeting Info

- 2011:** San Francisco, CA.....**Sep. 25-Oct. 1, 2011**.....Nikolas Lemos, Ann Marie Gordon
2011 DATE CHANGE
- 2012:** Boston, MA.....June 30-July 6, 2012.....Michael Wagner
- 2013:** Orlando, FL.....Oct. 26-Nov. 3, 2013.....Bruce Goldberger

2011 JAT SPECIAL ISSUE DEADLINES

Jarrad Wagner, Ph.D. is the 2011 Guest Editor of the Special Issue of the Journal of Analytical Toxicology (JAT). The Special Issue will be the September 2011 issue coinciding with the Joint Meeting of the Society of Forensic Toxicologists (SOFT) and the International Association of Forensic Toxicologists (TIAFT) in San Francisco, CA in September of 2011.

Manuscripts are reviewed in terms of originality, value to the field, technical content, and clarity.

Complete author guidelines can be found at the JAT website, www.jattox.com or from their editorial office at (847) 647-2900 ext. 1302.



All accepted manuscripts of the Sept. Special Issue in which the lead author is a SOFT member will be eligible for consideration of the 2011 Experimental Design and Impact on Toxicology (EDIT) Award. This prestigious award will recognize the (first) author of the paper which is judged to show excellent scientific experimental design and has a wide impact on the forensic toxicology field.

JAT DEADLINES:

- Abstracts for JAT Special Issue (Title & Abstract) Submitted by **January 31, 2011**
- Abstracts for JAT Special Issue (Manuscripts) Submitted by **February 14, 2011**

2010 S.O.F.T. COMMITTEE CHAIRS

Committee

ByLaws.....Yale Caplan, Ph.D., DABFT
Budget, Finance, and Audit.....Robert Turk, Ph.D., DABFT
Membership.....Dan Anderson, M.S., FTS-ABFT
ToxTalk Editor.....Yale Caplan, Ph.D., DABFT
Publications (JAT Special Issue)Laureen Marinetti, Ph.D., DABFT
Awards.....Philip Kemp, Ph.D., DABFT
Meeting Resource.....Sarah Kerrigan, Ph.D.
Drugs & Driving.....Jennifer Limoges, M.S., DABC
Policy and Procedure.....William Anderson, Ph.D.
SOFT Internet Web-Site.....Bruce Goldberger, Ph.D., DABFT
Matthew Juhascik, Ph.D.,
Continuing Education.....Ann Marie Gordon, M.S.
Young Forensic Toxicologists.....Teresa Gray, M.S.
Drug Facilitated Sexual Assault.....Laureen Marinetti, Ph.D., DABFT
Ethics.....Aaron Jacobs, Ph.D.
Nominating.....Anthony Costantino, Ph.D., DABFT
Strategic Planning.....Marc LeBeau, Ph.D.
Consortium of Forensic Science Organ.....Peter Stout, Ph.D., DABFT

Committee Chair



SOME SOFT HISTORY

1970

- Following discussions with fellow toxicologists at AAFS meetings in the late 1960s, Abraham Freireich, MD, issued a "Dear Colleague" letter inviting interested parties to an "interim meeting" on toxicology in 1970. Approximately 40 people attended the meeting, which was held at the Nassau County (NY) Medical Examiner's Office. Dr. Freireich earned his MD from the New York University Bellevue Hospital Medical School in 1932, and was a protégé of the great American toxicologist Alexander Gettler at the New York City ME's Office. In 1938, he became the Chief Toxicologist of the newly formed Nassau County ME's Office. He held this position until he retired in 1976. Dr. Freireich served on the Interim Planning Committee for the formation of AAFS. He was also one of the founding fathers of the Toxicology Section, serving as its chairman for three years. He was elected president of AAFS in 1954.
- Dr. Freireich also served on the National Safety Council's Committee on Drugs and Alcohol. In 1986, he was the posthumous recipient of AAFS's Gettler Award, recognizing his outstanding analytical achievements in forensic toxicology.



Pictured above: Irving Sunshine, Ph.D., DABFT, Sydney Kaye, Ph.D. and Leo Dal Cortivo, Ph.D., DABFT

1971

- Leo Dal Cortivo, PhD, DABFT, hosted the Second Interim Meeting at the Suffolk County (NY) ME's Office. More than 80 people attended this meeting, including Canadian colleagues from Montreal, Halifax, Toronto, and Quebec. Dr. Dal Cortivo was also a protégé of Alexander Gettler and served as the Chief Toxicologist at the Suffolk County ME's Office.

1972

- Louis Williams of Clin-Chem Laboratories in Boston hosted the Third Interim Meeting.

1973

- Jane Speaker, PhD, DABFT, hosted the Fourth Interim Meeting at the Sheraton Hotel in downtown Philadelphia. It was at this meeting that SOFT was voted into existence. The interim meeting was followed by a series of dinner meetings at board members' homes to discuss the organization, establish membership criteria, and wrestle with the issue of individual and/or laboratory certification. The name NSOFT (National Society of Forensic Toxicologists) was initially adopted for the fledgling organization, but was later changed to SOFT in deference to its Canadian members.

At the 2010 SOFT Annual Meeting in Richmond, Virginia, Sarah Carney and committee provided a beautiful SOFT History display describing the past 40 years of SOFT history through it's Presidents. ToxTalk will reproduce this work in the next few issues to share with those who did not attend the SOFT 2010 meeting.

SOME SOFT HISTORY

1974

- Arthur McBay, PhD, DABFT, and his staff at the Office of the Chief Medical Examiner in Chapel Hill, NC, hosted the Fifth Interim Meeting. Approximately 55 people attended. It was at this meeting that Elmer Gordon advocated for the inclusion of a free and open discussion period in what was becoming an increasingly formal meeting schedule. His suggestion lives on today as the annual Elmer Gordon Open Forum. Another important SOFT milestone in 1974 was the publication of the first Tox Talk by Dr. Jesse Bidanset (see 1976) and his wife Joan.
- Dr. McBay completed a bachelor's degree and a master's degree at the Massachusetts College of Pharmacy before enlisting in the US Army Air Corps in 1942. Following an honorable discharge in 1945, he earned a PhD from Purdue. He returned to his alma mater in Massachusetts to teach before accepting a position as a research assistant in Legal Medicine at the Harvard Medical School. In 1955, Dr. McBay assumed leadership of the Massachusetts Department of Public Safety Laboratory. In 1969, he became the Chief Toxicologist for the North Carolina OCME. He held this position until his retirement in 1989.

Pictured: Jane Speaker, Ph.D., DABFT, and Leonard Bednarczyk, Ph.D., DABFT



1975

- Dr. Jane Speaker became the first elected president of NSOFT and presided over the 1975 joint meeting with the Canadian Society of Forensic Science in Toronto. Dr. Speaker's background includes a bachelor's degree in chemistry, a master's in biochemistry, and a PhD in pharmacology. She taught dental and medical students and spent a few years in CNS research before joining the toxicology laboratory at the Philadelphia ME's Office in 1967. Dr. Speaker left the ME's office in the late 1980s but continued with toxicology consulting and court work. In 1988 she was the recipient of AAFS's Gettler Award. When asked about SOFT history, Dr. Speaker noted, "We've come a long way. There were 31 names on the first NSOFT membership list."
- One of the major events of 1975 was the incorporation of the American Board of Forensic Toxicology (ABFT), of which Dr. Speaker was a member of the board of directors from 1975 to 1981. ABFT was the much-awaited answer to the field of toxicology's call for a certifying body. During the 1975 business meeting, NSOFT became one of the first sponsoring groups of ABFT.

SOME SOFT HISTORY



Diplomates of the American Board of Forensic Toxicology (ABFT) at the 1978 AAFS meeting in St. Louis. Included among them are former SOFT presidents Al Poklis, Jane Speaker, Rosemary Kincaid, Leo Dal Cortivo, Robert Blanke, Richard Prouty, Len Bednarczyk, Jesse Bidanset, Art McBay, Yale Caplan, Tom Rejent, and Nick Hodnett.

1976

- Jesse Bidanset, PhD, DABFT, was the second elected president of NSOFT and presided over the New York City meeting hosted by Milton Bastos. In addition to being involved in those early discussions and decisions about the organization, Dr. Bidanset launched and edited Tox Talk, and served as an NSOFT treasurer as well.
- Dr. Bidanset taught at St. John’s University in Jamaica, NY, for over 25 years before retiring in 1997. Among his students is another former SOFT president, Joseph Balkon. Dr. Bidanset was Chief Toxicologist for the Nassau County ME’s Office (1972-1979), and has consulted for the Rockland County ME’s Office since 1974. He was also president of a forensic sciences company (1978-1992) and has been the Chief Consulting Toxicologist and Director of Forensic Sciences at InterCity Testing & Consulting since 1975.



Jesse Bidanset, Ph.D., DABFT

SOME SOFT HISTORY

1977

- Leonard Bednarczyk, PhD, DABFT, served as an early secretary of NSOFT and initiated incorporation of the organization before being elected president. He and his staff hosted the 1977 meeting aboard the Emerald Seas en route from Miami to the Bahamas. Also in 1977, the first membership roster was published in Tox Talk. There were about 75 members and associates; anyone who had attended a meeting prior to 1975 was designated a Charter member.
- Dr. Bednarczyk earned a bachelor's degree in chemistry at Loyola before completing a PhD in toxicology at the University of Maryland. He was the Chief Toxicologist for the State of Delaware. Later, he became the Director of Miami Toxicology Services, Inc., and the Clinical Laboratory Director for the Florida Department of Health & Rehabilitative Services.

1978

- Robert Blanke, PhD, DABFT, presided over the 1978 Niagara Falls meeting hosted by Tom Rejent and would host the 1979 meeting in Williamsburg, VA. He was integral to the early development of ABFT, serving on the AAFS Toxicology Section's committee on certification and standards. He was a member of ABFT's board for directors from 1976 to 1985.
- With a bachelor's degree in chemistry, Dr. Blanke went to work for the Cook County Coroner's Office Laboratories in 1949. By 1958, he had earned a master's and PhD in pharmacology from the University of Illinois and accepted a research position under Dr. Henry Freimuth at the Maryland OCME. In 1961, he returned to Illinois to start up two toxicology labs before becoming Chief Toxicologist for the Virginia OCME in 1963. He became the Director of the Toxicology Laboratory at the Medical College of Virginia in 1972, retiring in 1987. He trained over 20 graduate students, including former SOFT president Joseph Saady.



Robert Blanke, Ph.D., DABFT

1979

- Thomas Rejent, DABFT, presided over the Williamsburg meeting in 1979, which included SOFT's very first poster session. He was also the principal fund-raiser for SOFT's Education Research Award (ERA) at its inception. In addition, he persuaded the Journal of Analytical Toxicology (JAT) to publish a fall issue sponsored by SOFT and with SOFT members as guest editors. Mr. Rejent was a member of the ABFT board of directors from 1980 to 1986.