Society of Forensic Toxicologists, Inc.

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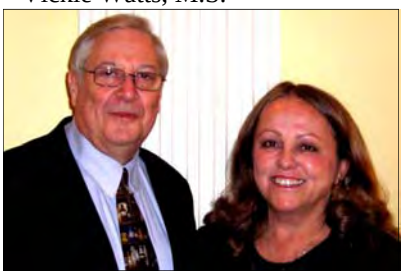
TOXTALK



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SOFT 2011 MEETING UPDATE!
RICHMOND, VIRGINIA
OCTOBER 18-22, 2010
40TH (RUBY) ANNIVERSARY

The 2010 annual meeting is only weeks away. The Planning Committee is fully engaged in final preparations to provide an extensive week of educational opportunities for all. Meeting Hosts, **Michelle Peace** and **Lisa Tarnai-Moak** proudly welcome meeting participants to their beloved Richmond!

The featured plenary and VIP Guest Speakers are . . .

- **Pete Marone**, Director of the Virginia Dept. of Forensic Science and Chair of the Consortium of Forensic Science Organizations.
- **Marcella Fierro**, M.D., former Chief Medical Examiner of Virginia, and formidable teacher of forensic pathology to medical students, law students, law enforcement agencies, and the Commonwealth's attorneys.
- **David Osselton**, M.D., prominent Forensic Sciences Professor at Bournemouth University in the UK.

The Scientific Program has been coordinated by **Julia Pearson** and co-Chaired by **Justin Poklis**. They are proud to publish 51 Platform Presentations and 72 Poster Presentations in 2010. Authors giving Platform Presentations will need to communicate with the AV Team (see details on pg. 9) prior to the meeting to make sure data format and equipment functions are compatible.

A wide range of topics are offered in the 11 workshops coordinated by **Carl Wolf**, II.

The SOFT 2010 meeting website (www.soft2010.org) has complete information and details about this "information packed" meeting. Please visit the site frequently to check on updates and to find links to related websites.

Four hotels are handling room accommodations for SOFT visitors to Richmond. **PLEASE BE SURE TO "RELEASE" ANY UNNECESSARY ROOMS AS YOUR TRAVEL ARRANGEMENTS ARE FINALIZED!** When reserved rooms are held but left unused, the hotel will charge SOFT substantial penalties to recoup their loss in revenue. It is imperative that anyone and everyone who makes an early reservation in the group's discounted room block, be cognizant of the REAL nights needed and adjust accordingly from the number of nights *guessed at* when making the initial reservations. If room reservations are corrected early, unsold rooms can be opened up for many others who otherwise will be diverted to overflow hotels.

PRESIDENT'S MESSAGE

Submitted by Bradford Hepler, Ph.D., DABFT

"ON GROWING OLDER, CAREER IMPERATIVES & MAKING A POINT"

It seems as though the cliché about the older and busier you become, the faster time passes, is directly applicable to me and the way my year has gone. This is both good and bad. Fast is good because it means you've been busy, but fast is also bad, as it means you have to really pay attention as things fly by in your life. Getting older seems to make that part much harder to stay up with. As Fall approaches, the time for the annual meeting is upon us. I hope that everyone has made their plans and is committed to coming to SOFT's 40th year celebration in Richmond Virginia.

Our meetings are becoming more and more important to attend, for lots of good reasons. Whether or not you believe that the NAS Report on the "Status of Forensic Science in America" will have impact on the general discipline of Forensic Science, you should know that it is already having impact on our discipline of Forensic Toxicology.

A great deal of effort is being put into the development of having a voice in the community of the Forensic Sciences, as the Forensic Toxicology Council (FTC) works to establish our voice in that community and with the Federal Government. As efforts to keep in the loop with the legislative branch and pending legislation continue, the feedback on these efforts are well represented in reports presented elsewhere in this issue.

Further good news comes with the selection of Dr.'s Sarah Kerrigan and Bill Anderson as advisors to the Executive Branch, Research Development Testing and Evaluation Interagency Working Group under the National Science and Technology Council Subcommittee on Forensic Science. Congratulations to both Sarah and Bill on being selected. I know that they will provide valuable input on our behalf as time passes.

Regardless of the success or failure of the above efforts with the Federal Government to improve our lot in this business, there are going to be changes in how we practice our trade as we go forward. The newly formed SWGTOX group of which many of you are involved is becoming active and will begin to develop standards of practice and guidelines for how we do our jobs. This is a real group. It is made up of our peers and it will have impact on all of us.

Expect recommendations for laboratory accreditation, and personal certifications in the practice of our discipline to be in all our futures. We need to accept that as a given. There will also be emphasis on a code of conduct and ethical behavior in how we practice our trade. This gets me back to my original observation, about the importance of attending annual meetings, such as the one coming up in Richmond on October 18-22, 2010. It is essential that you come, not only to this meeting, but also those coming down the road in San Francisco, Boston, and Orlando.

These are events and activities that will not only provide you information about all that's happening in our world, but will serve as an important avenue to continuing education activities that are essential in documenting career development and growth. Without participation in activities such as these, it will be very had to maintain personal certification in the future. So by all means, come to meetings, participate in the education process, learn from your peers, and become involved in providing benefits of your knowledge to your colleagues. It is a two way street, and the only way to truly benefit is to participate. This year's meeting features a full scientific program and eleven workshops offering a wide selection of topics, and the price of admission is still the best value for your dollar to be found anywhere.

In spite of all these good things going on in our industry, being in a laboratory that is a "public sector" agency in today's world is difficult. Many of our membership work in these "first" responder facilities. There are some aspects of the public sector agency pedigree that I'm afraid I am developing a… "bad feeling about"…it seems to me as much as the NAS report focuses on the need for improvement, standardization, elevating our game and serves as means to lobby our organizations for the resources needed to facilitate and maintain

PRESIDENT'S MESSAGE (CONTINUED)

accreditation and certification standards of practice, there is something unsettling in the wind. Unfortunately, the economy and economic malaise that began two years ago, seems to finally and ironically be working its way down to us. So at a time that we should be using the revelations in the NAS report to justify the need for resources to support the quality of our practice, economic woes trump the effort.

The public sector is hurting. Budget money is tight and becoming tighter due to local job losses, closing of businesses, loss of homes due to mortgage foreclosures and the true lack of relevant economic recovery diminishing public sector revenues. Leadership, the local politicians, their appointees and their selected financial wizards primarily looking at one budget cycle or at most one election cycle at a time, are looking for ways to balance the budget. Simplicity is the rule in this process of budget "adjustment".

Since Public Sector Forensic Toxicology Laboratories are not profit driven, and generally speaking, a drop in the bucket relative to the total local government budget, the major way in which political leadership manages its loss of revenue, is across the board cuts in spending which results in significant cuts in services. These cuts unfortunately are not targeted cuts. There is no consideration of relative merit of the impact of services lost or of the potential costs required to rebuild something once dismantled.

As an outcome, Forensic Toxicology Laboratories in the public sector are being closed, or are, in many cases, facing or have already been forced to layoff talented and irreplaceable personnel. This loss in resource impacts criminal proceedings, death investigations, and civil proceedings, as well as, limits the ability of proper investigation to identify public health and safety issues related to drug use, abuse and misuse in society. When resources are cut, the practicality is that the breadth of screening and the extent of analyses applied to given casework is cutback. Fewer investigations are initiated, fewer cases go to trial as either the evidence has not been tested or the personnel who performed the testing are not readily available for testimony, and less evidence per case is tested with less being asked for and provided in any referral process. If you don't look, you will not find—it's that simple.

With the changes coming in healthcare, more patients will be in the system, and it is not hard to imagine that clinicians will be asked to increase the rate of patients seen per hour. It is not hard to envision that however well-intentioned clinical practice would wish to be, that shorter physician office visits will result in increases in prescription drug therapy. The psychiatric industry is already very familiar with this approach in facilitating patient office visits and patient throughput by using psychopharmacology as an alternative to psychotherapy, the difference is four patients per hour as opposed to seeing just one.

One can debate the quality or merits of this approach applied within any health specialty, but the only way to monitor the general public health for medication trends in the forensic case population is to do the necessary testing on a properly collected set of specimens, and apply appropriate analysis across all evidence provided as required to correctly interpret the findings.

So what is the bottom line? It would seem that it is imperative to do our best to promote and maintain the existing local forensic laboratory infrastructure, and build upon it using the NAS report recommendations and industry standards of practice as rational for increased support and funding. Shifting resources, people, equipment and testing to a lesser service or minimal support in order to facilitate resource management and smaller budgets is not the answer. It becomes a false economy resulting is less testing, less scrutiny, and less public awareness of real drug related public health issues. It also costs much more than the original budget line item, to build it back once gone.

As individuals and as an industry we must do our best to convince local leadership and the general public of the relevance and the significance of what we bring to the table (for one example of how, see: **http://www.nctimes.com/news/local/sdcounty/article_8ffcd5d7-47ca-5c39-afc1-ef1ad2ae83c6.html**). What we do matters, how we do it matters, it's on all of us to make the point.

NOMINATING COMMITTEE OFFERS 2011 SLATE OF OFFICERS

Anthony Costantino, Chair of the 2011 Nominating Committee, respectfully submitted the following slate of Officer Nominations for consideration by the SOFT membership.

President:	Sarah Kerrigan, Ph.D.
Vice President:	Marc LeBeau, Ph.D.
Treasurer:	Peter Stout, Ph.D., D-ABFT
Director:	Jennifer Limoges, MS, D-ABC
Director:	Bruce Goldberger, Ph.D. D-ABFT

The President and Vice President serve one year terms, while the Secretary and Treasurer serve two year terms which expire in alternate years. Five additional Directors are elected for three year terms. If a Director cannot serve his/her entire term, an interim Director shall be named by the board to serve the remaining term. All Officers are also Directors.

President (one year term)
Sarah Kerrigan, Ph.D.

Sarah Kerrigan, Ph.D., is a Professor of Criminal Justice at Sam Houston State University where she is Director of the Master of Science in Forensic Science Program. She also serves as Laboratory Director of the Sam Houston Regional Crime Laboratory in The Woodlands, TX. She received her initial training in forensic toxicology in 1990 at the Metropolitan Police Forensic Science Laboratory in London, England. Between 2001 and 2004 she served as Bureau Chief for the New Mexico Department of Health, Scientific Laboratory Division where she was responsible for the blood and breath alcohol program in addition to forensic drug and alcohol related medical examiner and criminal casework statewide. Prior to this she was employed as a forensic toxicologist at the California Department of Justice Toxicology Laboratory in Sacramento, CA.

Over a period of six years Dr. Kerrigan served on the Board of Directors of the California Association of Toxicologists where she held a variety of elected positions, including President (2004-2005). She has chaired several committees of the Society of Forensic Toxicologists and American Academy of Forensic Sciences including Membership, Awards and Scholarship, and Drugs and Driving. Dr. Kerrigan was elected to the SOFT Board of Directors in 2006 and the Executive Board in 2008. She currently serves as Vice President.

Dr. Kerrigan has been a contributing author in several toxicology textbooks including Encyclopedia of Forensic Science, Principles of Forensic Toxicology, Encyclopedia of Forensic and Legal Medicine, Medical-Legal Aspects of Abused Substances, Forensic Nursing and others. She has published research in peer reviewed scientific journals on a wide range of topics. In 2002 she joined the faculty of the National Judicial College in Reno, NV. She was appointed to the Editorial Advisory Boards of the Journal of Analytical Toxicology and the Journal of Forensic Sciences. Dr. Kerrigan works closely with attorneys, law enforcement and the judiciary on drug and alcohol-related traffic safety issues. Dr. Kerrigan received the Outstanding DRE Program Innovation award from the International Association of Chiefs of Police in 2003 and was the recipient of the Irving Sunshine Toxicology Award from the American Academy of Forensic Sciences in 2002. She was appointed to the Forensic Science Education Programs Accreditation Commission in 2009 and to the Texas Forensic Science Commission by the Attorney General in 2008.

Vice President (one year term)
Marc LeBeau, Ph.D.

Marc A. LeBeau, Ph.D. is the Chief of the FBI Laboratory's Chemistry Unit. He has worked as a Forensic Chemist and Toxicologist for the FBI since 1994 and has testified as an expert in federal, state, and county courts throughout the United States. He has a Bachelors degree in Chemistry and Criminal Justice from Central Missouri State University (1988) and a Master of Science degree in Forensic Science from the University of New Haven (1990). He was employed in the St. Louis County Medical Examiners Office (1990-1994), before beginning his career with the FBI. In 2005, he received his Doctorate in toxicology from the University of Maryland – Baltimore.

Dr. LeBeau has co-authored numerous peer-reviewed papers in scientific journals, as well as book chapters and abstracts. He has provided training to more than 12,000 law enforcement officers, forensic scientists, attorneys, medical professionals, and rape crisis counselors throughout the world. Additionally, in 2001, he co-edited Drug-Facilitated Sexual Assault: A Forensic Handbook.

Dr. LeBeau is active in numerous scientific organizations. He has been an active member of the Society of Forensic Toxicologists (SOFT) since 1995. From 2000-2010, he served as Chairperson of the Drug-

NOMINATING COMMITTEE OFFERS 2011 SLATE OF OFFICERS (CONTINUED)

Facilitated Sexual Assault Committee and currently holds the office of Treasurer of SOFT.

Additionally, Dr. LeBeau serves on the Executive Board of The International Association of Forensic Toxicologists (TIAFT) and sits on the Systematic Toxicological Analysis Committee within TIAFT. He is a Fellow of the American Academy of Forensic Sciences (AAFS) and a member of the American Society of Crime Laboratory Directors (ASCLD).

Dr. LeBeau has served as the chairman of the Scientific Working Group on the Forensic Analysis of Chemical Terrorism (SWGFACT) and co-chair to the Scientific Working Group on the Forensic Analysis on Chemical, Biological, Radiological, and Nuclear Terrorism (SWGCBRN). He is currently a member of the Scientific Working Group for Forensic Toxicology (SWGTOX).

Dr. LeBeau is on the editorial board of a number of scientific journals including *Forensic Science Communications*, the *Journal of Analytical Toxicology*, and *Forensic Toxicology*. He has also served as Guest Editor to the *Journal of Analytical Toxicology*, the *Journal of Chromatography B*, *Forensic Science International*, and *Forensic Science Review*. Dr. LeBeau is an American Society of Crime Laboratory Directors - Laboratory Accreditation Board (ASCLD-LAB) assessor in the areas of drug chemistry and forensic toxicology and serves on the ASLCD-LAB Toxicology Proficiency Review Committee.

In 2004, Dr. LeBeau won the *FBI Director's Award for Outstanding Scientific Advancement* and in 2008 he was the recipient of the *End Violence Against Women (EVAW) International Visionary Award*.

Treasurer (two year term)
Peter Stout, Ph.D., D-ABFT

Peter Stout, Ph.D. is a Senior Research Forensic Scientist in the Center for Forensic Sciences at RTI International (RTI), has more than 15 years of experience in forensic urine drug testing, postmortem toxicology, and human performance testing laboratories. He is a licensed Laboratory Director for New York and Tennessee. He has served as a Responsible Person of a federally certified urine drug-testing laboratory and as Director of a U.S. Navy Drug Screening Laboratory. Dr. Stout is an active member of the Society of Forensic Toxicologists (SOFT), he is an American Academy of Forensic Sciences (AAFS) Fellow, and he is the past Chair of the Toxicology Section of AAFS. He currently represents SOFT to the Consortium of Forensic Science Organizations (CFSO). He also serves as a laboratory inspector for the National Laboratory Certification Program (NLCP) (Substance Abuse and Mental Health Services Administration [SAMHSA]) and for the American Board of Forensic Toxicology (ABFT). At RTI, he has served as the Project Leader for the Pilot Oral Fluid Performance Testing Program (SAMHSA) and as key personnel for the NLCP. He is currently the Principal Investigator (PI) for a National Institute of Justice (NIJ) grant to develop a spectral database for the AccuTOF Direct Analysis in Real Time (DART) to postmortem toxicology. He also serves as Co-PI on several forensic science projects, including Technology Transfer Strategies of Forensic Science Research and Development to the Practitioner End User (NIJ) and for other projects that assess technology transfer strategies and Web-based educational materials for forensic scientists.

Director (three year term)
Jennifer F. Limoges, MS, D-ABC

Jennifer Limoges received her B.S. in Chemistry from Clarkson University and her M.S. in Forensic Science from the University of New Haven. She began working for the New York State Police as a Forensic Scientist in 1994. Currently, she is the Supervisor of Forensic Services for the Toxicology and Breath Testing Departments of the NYSP Forensic Laboratory System. Ms. Limoges is an active member of the Society of Forensic Toxicologists (SOFT) and the American Academy of Forensic Sciences (AAFS). She is the current Chair of the SOFT/AAFS Drugs & Driving Committee, and has been an active member (and past chair) of the SOFT Continuing Education Committee. She is a member and Past President of the Northeastern Association of Forensic Scientists (NEAFS), a member of the International Association for Chemical Testing (IACT), and a Diplomate of the American Board of Criminalistics (ABC). Ms. Limoges sits on the National Safety Council's Committee on Alcohol and Other Drugs, and currently serves on their Executive Committee. She is an inspector for the American Society of Crime Laboratory Directors/ Laboratory Accreditation Board (ASCLD/LAB), and an Associate Adjunct Professor for the Chemistry Department at the University at Albany. She served as the Guest Editor for the 2009 SOFT Special Issue of the Journal of Analytical Toxicology.

Ms. Limoges' primary area of interest is in impaired driving issues, and she is a strong proponent of continuing education. She has hosted numerous workshops over the years at both the local and national level, providing training to toxicologists, law enforcement officers, and attorneys.

NOMINATING COMMITTEE OFFERS 2011 SLATE OF OFFICERS (CONTINUED)

Director (three year term)
Bruce Goldberger, Ph.D., D-ABFT

Bruce Goldberger, Ph.D. is a Professor and Director of Toxicology in the Department of Pathology, Immunology and Laboratory Medicine in the College of Medicine at the University of Florida in Gainesville. He holds a joint Clinical Professor position in the Department of Psychiatry in the College of Medicine. Dr. Goldberger is also the Director of the William R. Maples Center for Forensic Medicine and Program Director for the Florida Emergency Mortuary Operations Response System.

Dr. Goldberger received a Bachelor of Arts Degree in Zoology from Drew University in Madison, New Jersey and Master of Science and Doctor of Philosophy Degrees in Forensic Toxicology from the University of Maryland School of Medicine in Baltimore, Maryland. Dr. Goldberger is a Diplomate of the American Board of Forensic Toxicology, certified as a Toxicological Chemist by the National Registry of Certified Chemists and a Fellow of the National Academy of Clinical Biochemistry.

In recognition of his research achievements in forensic toxicology, Dr. Goldberger was presented with the first annual Sunshine Award from the Toxicology Section of the American Academy of Forensic Sciences in 1988. In addition, he was the 1994 recipient of the American Association for Clinical Chemistry's Outstanding Scientific Achievements by a Young Investigator Award. In 2004, Dr. Goldberger was the recipient of The International Association of Forensic Toxicologists' mid-career achievement award for excellence in forensic toxicology. Finally, Dr. Goldberger received the Alexander O. Gettler Award in recognition of his outstanding contributions to the field and profession of forensic toxicology from the Toxicology Section of the American Academy of Forensic Sciences in 2006.

Dr. Goldberger is the editor-in-chief of the Journal of Analytical Toxicology and is a member of the editorial boards of the Journal of Forensic Sciences and Forensic Science Review. Dr. Goldberger is an active member of the American Academy of Forensic Sciences and the Society of Forensic Toxicologists.

TREASURER'S REPORT

Submitted by Marc LeBeau, Ph.D.

Last year at this time, SOFT had just completed an independent, certified audit of the 2008 financial statements. As part of that audit, we received a few recommendations to help us improve our practices as an organization. I reported earlier this year that all of those suggestions were accepted by the SOFT Board of Directors and have been implemented.

One of the recommendations involved the oversight of the Annual Meeting bank accounts by the SOFT Treasurer – not just the Meeting Treasurer, as was the tradition in years past. As such, the SOFT Treasurer can now review the daily transactions that occur with the Annual Meeting accounts and is responsible for the monthly reconciliation of these accounts. What this means for the membership is a better appreciation of the financial status of SOFT.

Table 1 below shows the balances of these accounts two-thirds of the way through the year. As you review these numbers, please keep in mind that there are many expenses for the upcoming Annual Meeting in Richmond that have not been paid yet. Nonetheless, the importance of the Annual Meeting to SOFT operations is once again demonstrated with these figures.

As always, if you have any questions about the finances of SOFT, please do not hesitate to contact me at marclebeau@verizon.net.

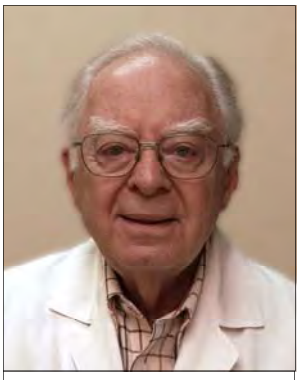
Table 1: Balances as of 09/01/2010

	Balances:		
Account Name:	**12/31/2009**	**9/1/2010**	**Net Increase/(Decrease)**
Operational Account	$120,502.37	$96,005.08	($24,497.29)
Reserve Account	$100,197.94	$100,084.96	($112.98)
ERA Account	$187,229.33	$191,031.91	$3,802.58
Online Dues Account	$500.00	$32,390.32	$31,890.32
Annual Meeting - Checking	$5,000.00	$244,911.95	$239,911.95
Annual Meeting - Merchant	$425.00	$240,628.36	$240,203.36
TOTALS:	**$413,854.64**	**$905,052.58**	**$491,197.94**

SPECIAL REPORT
KURT M. DUBOWSKI, PH.D., LLD, DABFT, DABCC
AWARDED THE AAFS GRADWOHL MEDALLION

Submitted by Yale H. Caplan, Ph.D., DABFT

The American Academy of Forensic Sciences announced today (August 13, 2010) that Kurt M. Dubowski, Ph.D. will be awarded the Academy's R.B.H. Gradwohl Medallion at the Academy's Annual Meeting in February, 2011 in Chicago. The award is considered the most prestigious in the forensic sciences and has been awarded only 12 times since 1978. Dr. Dubowski is cited for his service to forensic science and particularly forensic toxicology over many years of a long and distinguished career.



Kurt M. Dubowski, Ph.D.

Kurt M. Dubowski was educated at Johns Hopkins University, New York University (A.B.), and The Ohio State University (M.Sc., Ph.D.). He holds an honorary Doctor of Laws degree conferred by Capital University. Dr. Dubowski joined the medical faculty of The University of Oklahoma in 1961, and is now George Lynn Cross Distinguished Professor Emeritus of Medicine. He is Principal Research Scientist, Bioaeronautical Sciences Research Laboratory, Civil Aerospace Medical Institute, Federal Aviation Administration, Oklahoma City, OK; and is also Chairman Emeritus, Board of Tests for Alcohol and Drug Influence and State Director Emeritus of Tests for Alcohol and Drug Influence of the State of Oklahoma.

Dr. Dubowski's career has focused on forensic science since his first appointments in 1950 as Norwalk police chemist and scientific investigator with the Fairfield County, CT, Coroner. His forensic science career includes a five-year term as the first state criminalist of Iowa and a triplet of official Oklahoma state positions since the 1960's: Chairman of the Board of Tests for Alcohol and Drug Influence; State Director of Tests for Alcohol and Drug Influence; and Scientific Director of the Oklahoma Department of Public Safety/Oklahoma Highway Patrol. Along the way, he also founded the toxicology laboratory of the Oklahoma State Medical Examiner's Office and the forensic laboratory of the Oklahoma State Bureau of Investigation – both now independent units. He was a charter member of the Indiana University/Bloomington Borkenstein Course faculty.

Dr. Dubowski's research interests and contributions have been in both medical and forensic sciences, encompassing development of innovative methodology, human studies, and clinical and forensic applications of chemistry and toxicology as reflected in his many publications. His o-toluidine method for body fluid glucose determination, developed in 1961, became for the next decade the most widely used clinical chemistry procedure worldwide and it was the first Reference Method adopted by the FDA. Following publication in 1962 in Clinical Chemistry, it became a "citation classic" and is one of the most widely cited publications in the field of clinical chemistry. Another article in the Journal of Forensic Sciences by Mason and Dubowski on the forensic aspects of breath-alcohol analysis became a second "citation classic". Methods for blood- and tissue-alcohol analysis developed by him have been used by clinical and forensic laboratories throughout the world. In the mid seventies, Dr. Dubowski recognized the need for the documentation of qualifications for forensic scientists working in the legal system and was pivotal in the creation of the American Board of Forensic Toxicology serving as the Board's first president and continuously as a Director until his retirement and the attainment of Emeritus status.

Dr. Dubowski is Past President of the American Academy of Forensic Sciences, of the American Association for Clinical Chemistry, and of the American Board of Forensic Toxicology; and is President Emeritus of the American Board of Clinical Chemistry. He has been a member of the National Safety Council's Committee on Alcohol & Other Drugs since 1950; and is a past member of the Transportation Research Board, National Research Council, National Academy of Sciences. His work on the development and evaluation of tests for drugs-of-abuse in biological specimens led to consultation for many government agencies. He was a charter member of the Drug Testing Advisory Board of the U.S. Department of Health and Human Services.

Dr. Dubowski's professional honors and awards include selection as a Widmark Laureate of the International Council on Alcohol, Drugs, and Traffic Safety (1980), conferral of the George Lynn Cross Distinguished Professor of Medicine chair by the University of Oklahoma (1981), the first Rolla N. Harger Award of the American Academy of Forensic Sciences (1983), designation as a Distinguished Fellow of the American Academy of Forensic Sciences (1991), the Robert F. Borkenstein Award of the National Safety Council (1992), designation as a Distinguished Alumnus of The Ohio State University (1994), the Distinguished Service to Safety Award of the National Safety Council (1995), the Award for Outstanding Contributions to Clinical Chemistry by the American Association for Clinical Chemistry (1996), establishment of the Kurt M. Dubowski Award by the International Association for Chemical Testing (2002), and proclamation as a Honorary Texas Ranger By the Texas Department of Public Safety (2007).

Dr. Dubowski is easily one of the most inspirational figures to embrace the forensic toxicology and the forensic science communities for the last three score years. He truly represents the ideals of the Gradwohl Medallion.

SOFT 2010 After-Hours Special Events

The Ruby Presidential Ball—Thursday

"SOFT 2010" is the 40th Anniversary of the "organized" SOFT annual meeting. In celebration, the 2010 President's Banquet will have a "Ruby Red" theme. Meeting attendees are requested to wear the color red for that evening and enjoy a delicious dinner, dessert, cocktails, and dancing to the selected band, Casper!

No additional ticket must be purchased to attend the "Ruby Presidential Ball" (w/ a full meeting registration). Additional tickets may be purchased from the registration desk for a significant other to attend. All meeting attendees will receive their "invitation" upon check in when badges are picked up.

During the Ruby Presidential Ball, two winning "raffle tickets" will be randomly selected to win a San Francisco *tour package* and a complimentary night stay at the Marriott Marquis Hotel, the very location of next year's 2011 Joint Meeting of SOFT and TIAFT.

The Medicine Show Festival—Wednesday

On Wednesday evening, after Happy Hour and Dinner with the Exhibitors, all meeting attendees are invited to attend a "Medicine Show Festival" (at 8:30 pm). Participants will be treated to a carnival type "midway" atmosphere featuring arcade games (w/prizes), a rock-abilly band, casino tables, and a photo booth. Delectable treats, such as cotton candy, soft pretzels, fried twinkies, and popcorn will be served!

A "side show" sponsored by Cerilliant, (Night Owl XI) will feature the popular entertainer David VanDerVeer, Chain Saw Comedian!

Elmer Gordon Open Forum—Tuesday

One of SOFT's early members, Elmer Gordon, was a toxicologist from Henrietta, New York who felt strongly that SOFT should serve as an instrument of informal communication between colleagues. After his passing in 1979, an event at the SOFT annual meetings was named in honor of him, that being the "Elmer Gordon Open Forum".

This Open Forum is heavily attended each year and enjoyed by meeting participants since 1983. Please plan to drop in this year, to learn or enlighten others, about a current topic of interest. This year's "Elmer Gordon" is scheduled for Tuesday evening at 8:30 pm—10:30 pm, after the Welcome Reception with Exhibitors.

SOFT 2010 AV Team - Instructions For Guest Speakers & Workshop Faculty

The SOFT Audio-Visual support staff are tasked with making sure all the workshop and scientific presentations run smoothly. Attendees and presenters expect to focus on the information provided in the presentation, not on making the computers and peripherals run properly.

SOFT members Frank Wallace, Dale Hart, and Carl Horn will assist all presenters with their digital presentations. All digital files will be loaded onto laptop computers ahead of time and tested to make sure everything runs properly. All files will be backed up and can be re-loaded if a problem occurs.

All presentations will be hyperlinked from agenda slides to provide a seamless flow between presentations.

Presenters are requested to send in their presentations as soon as possible, but before October 15, 2010. There are two primary ways to send in presentations:

- Email Frank (Frank.Wallace.2@gmail.com). This method works well in most instances.
- Upload to http://www.soft-workshops.org/uploadfile.asp. (Use if presentation files are too large to send by email, if multimedia files are needed, or if mail server issues arise.)

Friday, Oct. 15, 2010 will be the last day to accept presentations via email and web uploads.

Anyone with special requests should contact us as soon as possible.

Frank Wallace

Dale Hart

Carl Horn

LATE BREAKING NEWS! A draft of the SOFT 2010 Scientific Session has been posted on the SOFT2010.org website to assist attendees / presenters in travel planning.

Go Green Thumb Drive

Meeting registrants will be receiving the printed Program Book with Scientific Abstracts PLUS the identical information loaded onto a thumb drive this year. In future years, it may become a favored option instead of the heavy book!

Look For History Posters

Since this is SOFT's 40th Meeting Anniversary, we will be paying tribute to our 40 past presidents in an interactive poster group that will also allow us to develop our lineage to the first forensic toxicologist in the United States, Alexander Gettler. We will also have a series of posters expounding upon significant cases in the development of forensic toxicology. These posters will be displayed throughout the week in the Exhibit Hall.

Become More Involved-Volunteer at SOFT 2010

During the annual meetings, there are so many areas where an hour or two of volunteer help could be so useful and greatly appreciated by the organizers. A full week of non-stop events takes a great deal of orchestration and coordination. Any attendees who may find an extra hour or two in their schedule, can contact Volunteer Coordinator, Deb Denson, (denson@rti.org). Long time "regulars" as well as new helpers are encouraged to volunteer.

Simply email Deb any days and times that may be available to contribute. She will be able to coordinate a schedule for such jobs as:

- Workshop Check In
- Entrance Ticket Collection
- Registration Desk Attendants
- Silent Auction Attendants
- Moving Heavy Boxes
- Banner Build / Move
- Place decorations

YOUNG FORENSIC TOXICOLOGISTS COMMITTEE

Submitted by Teresa Gray, Ph.D., Chair of the Young Forensic Toxicologists Committee

The 2010 SOFT meeting in Richmond, Virginia will be the inaugural meeting of the Young Forensic Toxicologist (YFT) Committee.

The YFT Forum is scheduled for Sunday, October 17th, 5pm—9pm at the Downtown Richmond Marriott and will feature a presentation about *Alcoholic Energy Drink Consumption Among Young Adults*, by Dr. Mary Claire O'Brien, followed by an open discussion.

The YFT encourages participation of young people in SOFT activities and facilitates networking and training opportunities for forensic toxicologists aged 40 years and younger - our future leaders of forensic toxicology.

The YFT committee is also planning to award prizes for the best platform and poster presentation given by a young scientist during the 2010 meeting in Richmond.

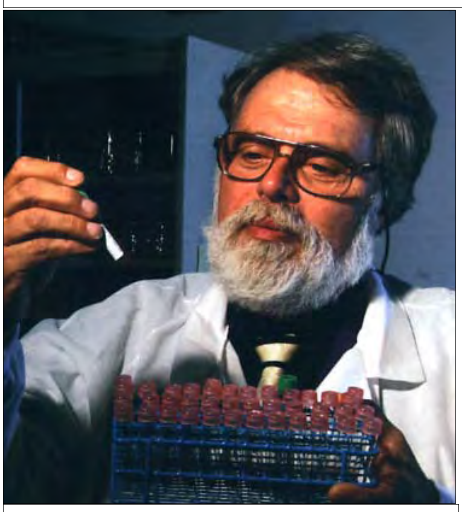
Teresa Gray, Ph.D.
YFT Chair

For more information about the YFT Committee, please contact Teresa Gray at softyft@gmail.com.

DAILY PHOTO MONTAGE

During the SOFT annual meeting in Richmond, volunteer students will be randomly photographing SOFT conference participants. Pictures will be printed every evening and posted on bulletin boards for the SOFT attendees to enjoy and take home as souvenirs.

SOFT STUDENT EDUCATION PROGRAM (SSEP) NEWS FOR 2010



Alphonse Poklis, Ph.D., D-ABFT in his laboratory.

The SOFT Student Education Program (SSEP) in 2010 will have a bit of a different twist than in past years. Alphonse Poklis, Ph.D. has generously agreed to coordinate this daylong program in 2010. Virginia Commonwealth University (VCU) in Richmond has enrolled over 400 undergraduate and 50 graduate M.S. students, therefore, area students are well aware of forensic sciences. As a result, this particular year SOFT will provide a forensic toxicology education workshop for fifty central Virginia high school science teachers. The vision is that the attending teachers can reach a far larger sphere of young people.

The plans for this year's SSEP is to provide a workshop curriculum with lectures focusing on the various areas of forensic toxicology, followed by laboratory experiments which exemplify analytical toxicology methods, ie, TLC of OTC drug mixtures. These labs will use a "make and take" format with "lesson plans". The teachers will have step by step instructions for the experiments as well as samples of the materials (TLC plates, microdiffusion dishes) to use in their high school science classes.

These workshop lectures and laboratories will be held on Sunday, October 17, 2010 at the VCU Life Sciences Building. A complimentary breakfast of baked goods, a catered lunch and a certificate reception is planned for all participants.

. . . . and again, in his REAL laboratory!

SOFT 2010 EXTRAORDINARY EXHIBITOR SUPPORT

"THANK YOU" TO MEETING EXHIBITORS / **SPONSORS**

Each year the list of exhibiting companies and financial sponsorships of the SOFT annual meeting becomes more impressive.

The financial commitment from exhibitors is absolutely essential in keeping meeting registration fees low for attendees. The following exhibiting companies will partner with SOFT in Richmond. Please acknowledge their collective generous contributions and extend your appreciation and business toward these indispensable associates in business.

Those companies who have committed additional financial sponsorship funding for SOFT2010 are in bolded print. The 87 booth exhibit floor is now "sold out", and will be the designated venue for the Wed. - Thurs. lunches, Tues. - Wed. dinner receptions, poster presentation sessions, and the Sunshine/Rieders Silent Auction.

In order to enter the Exhibit Hall, security will assure that all attendees are wearing their "SOFT 2010" ID badge. Plan to wear your badge at all times while "on-site".

AB Sciex
Advanced Chemistry Development
Aegis Sciences Corp.
Agilent Technologies
AIT Laboratories
Alere Toxicology Services
ALMSCO International
Alternative Biomedical Solutions
American Solutions for Business
Anton Paar USA
Apollo LIMS / Common Cents Systems
Axiom Diagnostics, Inc.
Biochemical Diagnostics
Biophor Diagnostics
Biotage
Branan Medical Corp.
Bruker Daltonics
Campbell Science
Carolina Liquid Chemistries Corp.
Cerilliant Corp.
ChemWare, Inc.
Data Unlimited International, Inc.
DPX Labs.
Express Diagnostics International, Inc.
GBF Medical
Geneva Bioinformatics
GenTech Scientific, Inc.
GERSTEL, Inc.
Grace Davison Discovery Sciences
iChrome Solutions
Immunalysis Corp.
Intoximeters, Inc.
Journal of Analytical Toxicology (JAT)
JEOL USA, Inc.
Justice Trax, Inc.
LECO Corp.
Lin-Zhi International, Inc.
Lipomed
Microliter Analytical Supplies, Inc.
Neogen Corp.
NMS Labs.
OraSure Technologies, Inc.
Orochem Technologies, Inc.
Parker—domnick hunter
Perkin Elmer
Phenomenex
Preston Publications
Quality Assurance Service Corp.
Randox Laboratories, Ltd.
Restek Corp.
Roche
RTI International
Rudolph Research Analytical
Sciteck Diagnostics, Inc.
Select-O-Sep, LLC
SGE Analytical Science
Shamrock Glass Company, Inc.
Shimadzu Scientific Instruments, Inc.
Siemens
Speware Corp.
Thermo Scientific
United Chemical Technologies (UCT)
UTAK Laboratories, Inc.
Varian, Inc.—Now Agilent Technologies
Venture Labs, Inc.
Waters Corp.
Wondfo USA
X-Link Bioscience

MANY WAYS TO SEE RICHMOND!

Several opportunities will be available throughout the week for attendees to explore and enjoy Richmond! On Monday, **tours through the Department of Forensic Science**, Central Laboratory, will be available.

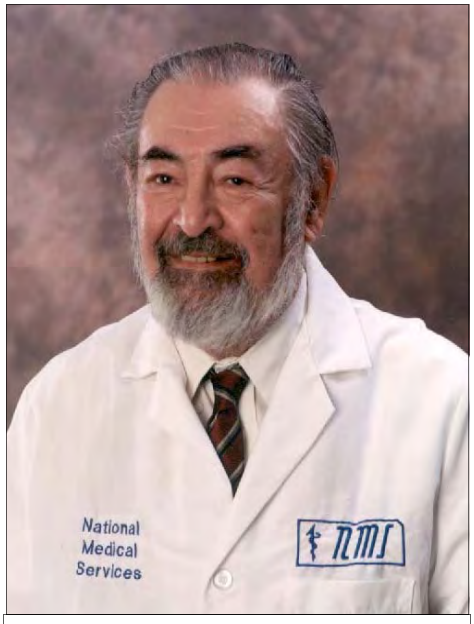
Beginning Monday, a **tour bus loop** will run between significant historical sites throughout the city and to sites of interest outside the city. Popular **walking tours** beginning at the Marriott will be identified. **Segway tours** will be made available on Monday and/or Tuesday, depending on interest.

A golf package has been arranged at Birkdale ($30 for range fees, a cart, and range balls) for Monday and Tuesday tee times only. Contact Michelle at mrpeace@vcu.edu if you are interested in arrangement of a "tee time". Schedules will be located at the registration desk bulletin boards. For more information, refer to the SOFT 2010 website under "Attractions". The Segway tours and the **Birkdale golf package** will be made available only if enough people are interested.

SOFT 2010 "SUNSHINE / RIEDERS SILENT AUCTION"

The Sunshine / Rieders Silent Auction will make it's 5th Annual appearance in Richmond during the SOFT 2010 annual meeting.

This very popular program began in 2006 as a memorial event to honor the passing of two illustrious leaders in forensic toxicology, Dr. Irving Sunshine, and Dr. Frederic Rieders.



Dr. Fredric Rieders, Ph.D.

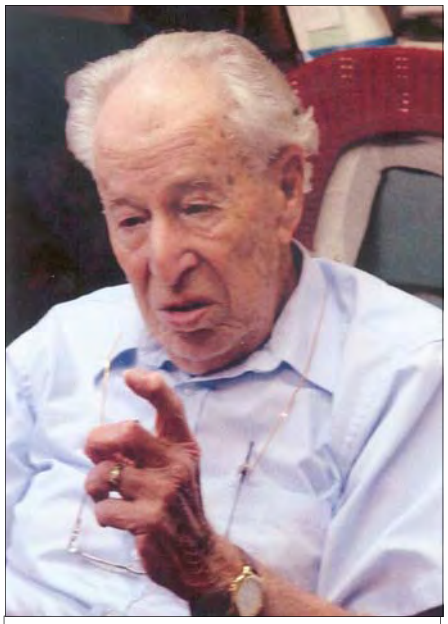
This annual tradition keeps the Sunshine / Rieders names alive and provides funding for the student enrichment programs into the future.

Since Dr. Sunshine and Dr. Rieders focused their energy on academic encouragement in this field, it is thought to be an appropriate way to acknowledge their lifetime contributions and continue their legacy of promoting education in forensic toxicology.

Individuals or companies traditionally donate a wide variety of items to be displayed in the exhibit hall over several days of the annual SOFT meeting. These items will each have an accompanying "bid sheet" available for participants to write in what they would pay to "win" the item. When the auction ends, the competitive, winning bidder makes his claim, and 100% of the collected funds will be utilized for SOFT student enrichment programs.

Anyone wishing to donate articles of interest to this worthy endeavor can find a "contribution pledge form" attached at the end of this issue of ToxTalk, OR simply bring items to the Registration Desk to have a bid sheet prepared.

For further information about this event, please contact the 2010 Silent Auction Chair, Lisa Moak (LTarnai@aol.com).



Dr. Irving Sunshine, Ph.D.

CONGRATULATIONS 2010 ERA/YSMA AWARDEES

Congratulations to the following 2010 SOFT Awardees of the Educational Research Award (ERA) and the Young Scientist Meeting Award (YSMA). These four winners will report the findings of their research during the Scientific Session at the October annual meeting in Richmond, Virginia.

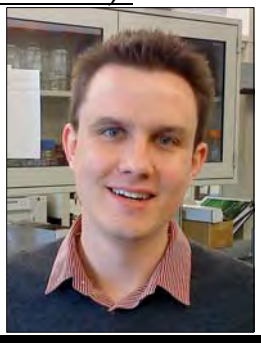
The ERA was established in 1980 to encourage academic training and research in areas related to forensic toxicology.

The YSMA was established in 2003 to recognize bench level scientists working in the field of forensic toxicology. Both awards allow for a complimentary registration to the annual meeting, plus a financial stipend of $2,000 each. These four awardees will be presented with an honorary plaque during the SOFT Business Meeting in Richmond, on Thursday, October 20, at 3:30 pm.

The SOFT website (www.soft-tox.org) has a link for eligibility and application information. All SOFT members are urged to persuade co-workers and accomplished students to apply for these prestigious recognition awards.

Hannah Bunten - (ERA)
Center for Forensic Sciences, Bournemouth University, UK
Sponsor: David Osselton, Ph.D.
Research Title: "Linkage Between Methadone Fatality and OPRM1 and CYP2B6 Gene Variants"

David Schwope - (ERA)
Intramural Research Program, NIDA Baltimore, Maryland
Sponsor: Marilyn Huestis, Ph.D.
Research Title: "Postmortem Redistribution of Δ^9-tetrahydrocannabinol (THC), ll-hydroxy-THC (11-OH-THC), and 11-nor-9-carboxy-THC (THCCOOH)"



Samantha Tolliver - (ERA)
Department of Chemistry & Biochemistry, FL Int'l. University
Sponsor: Lee Hearn, Ph.D.
Research Title: "Evaluating the Relationship between Postmortem and Antemortem Morphine and Codeine Concentrations in Whole Blood"

Brianna Peterson—(YSMA)
Washington State Crime Lab.
Sponsor: Brian Capron, B.S.
Research Title: "Evaluation of Drug Recognition Expert Reports in Marijuana Cases"

SOFT 2010 KARLA MOORE ANNUAL FUN RUN / WALK

A separate Fun Run Sign Up / Liability Waiver is included with this ToxTalk issue (last page). Those who wish to participate should pre-register to reserve a commemorative tee shirt in a specified shirt size. This event has grown larger each year and includes both true athletes as well as the recreational participant.

Three prizes contributed by Agilent Technologies, will be awarded to the fastest Men's Runner, fastest Women's Runner, and the fastest Walker. Other sponsors of the Fun Run are:

- Agilent (prizes)
- Cerilliant
- OraSure
- Roche
- Quality Assurance Service
- Shamrock Glass

Much appreciation is due to Trish Francis, who has generously agreed to coordinate this event in Richmond for 2010, and to the crew of volunteers who will be positioned at specified areas throughout the "historical path" to direct runners during this 14th Annual "Tox 'n Purge" 5k event.

DRUGS IN THE NEWS

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

ETHANOL, ETHYL GLUCURONIDE, AND ETHYL SULFATE IN URINE

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

Over the past couple of years I have found myself increasingly involved in interpreting the results of urine ethanol, ethyl glucuronide and ethyl sulfate tests for attorneys. One reason for this is because, through some twist of fate, I became the "go-to guy" for these things for our State Board of Nursing. The individuals being monitored by this and similar agencies are often, due to past alcohol abuse issues, required to be alcohol abstinent as a condition of their continued licensure. However, I suspect that the most likely reason is that in October 2006 the Wall Street Journal printed a story entitled "Federal Agency says Urine-Alcohol Test isn't Totally Reliable", following a Substance Abuse Treatment Advisory issued by SAMHSA regarding ethyl glucuronide testing.

I will talk more about that later, but let's first re-examine some of the issues of alcohol abstinence monitoring.

Urine Ethanol:

It is estimated that less than 5% of an ethanol dose is excreted unchanged in man. However, due to ethanol's relatively high concentration in the body after ingestion of pharmacologically significant quantities, it is readily detectable in the urine after use. As with most urinary drug concentrations, the prediction of impairment or a corresponding blood concentration from a urine concentration is a practice that should be shunned, or at the very least, approached with considerable caution.

Urine alcohol concentrations generally lag behind those of blood during the absorptive phase until around the time of peak BAC, when the urine concentration exceeds that of blood. Urine alcohol concentration continues to exceed that of blood throughout the subsequent decline in blood ethanol concentration. The ratio of urine to blood ethanol concentration in the post-absorptive phase can be quite variable, but in general it has a mean of about 1.3 to 1.4. Though not recommended as a routine practice, one can theoretically estimate an equivalent BAC in the post-absorptive phase by having an individual void his bladder and then subsequently collect a urine specimen some 20 to 30 minutes later. Dividing the determined urine ethanol concentration by 1.3 – 1.4 would theoretically represent an average BAC over the time period between the voids. Perhaps a more practical and less contentious use of a urine alcohol concentration in alcohol abstinence environments would be to simply use a randomly collected urine specimen and divide the urine alcohol concentration by 1.3 – 1.4 as an estimate of "at least" how high an individual's BAC was since his last void. In all cases, these estimates should be used with caution.

The detection window for ethanol in urine is rather short in comparison to many other drugs. In general, one would expect for an individual to have detectable ethanol in his/her urine beginning shortly after drinking and for as long as his/her blood alcohol was positive and continuing until her next void. Practically, the detection time would probably be no more than 2 – 3 hours after his/her blood alcohol became negative. In general, assuming a peak BAC of 0.10 g/dL, one would expect a person's urine alcohol to be detectable for about 8 – 10 hours after the cessation of drinking; longer, of course, with a higher peak BAC. This leaves little opportunity for effective compliance monitoring, particularly in an individual who drinks in moderation and knows when he/she will be tested.

It is widely recognized that the presence of significant levels of urinary glucose, as may be found in an uncontrolled diabetic, along with various yeasts and/or bacteria may result in the in-vitro formation of ethanol in unrefrigerated and unpreserved urine specimens. It is this phenomenon, as well as the short detection window of parent ethanol, that has given rise to the pursuit of ethanol metabolites that would ideally only be produced in-vivo and that possess longer detection windows.

Ethyl glucuronide:

Although sometimes referred to as a biomarker, ethyl glucuronide (ETG) is a minor metabolite of ethanol, accounting for approximately 0.5 – 1.5% of total ethanol elimination. ETG is formed when ethanol is conjugated with uridine diphosphate glucuronic acid. ETG is detectable in urine approximately one hour after ethanol intake and is detectable for 80 – 120 hours or more after urine ethanol is no longer detectable.

ETG is reportedly stable in urine at room temperature for up to 4 days. However, it has been shown to

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)

be possible to hydrolyze ETG by the action of bacteria often present in urinary tract infections. Furthermore, it has also been shown to be possible to form ETG, in-vitro, in the presence of E. coli and ethanol. Presumably this ethanol could arise from in-vitro fermentation of glucose in an uncontrolled diabetic, as described above.

Ethyl Sulfate:

Ethyl Sulfate (ETS) is formed by sulphotransferases and is a minor metabolite of ethanol. ETS is typically found in lower urinary concentration than is ETG and has a detection time of approximately 80 hours after ethanol ingestion.

ETS has not been shown to be formed in-vitro nor has it been shown to be degraded by bacterial action.

U.S Department of Health and Human Services Advisory:

In September 2006, the U.S. Department of Health and Human Services issued a Substance Abuse Treatment Advisory with the warning:

> *Currently, the use of an EtG test in determining abstinence lacks sufficient proven specificity for use as primary or sole evidence that an individual prohibited from drinking, in a criminal justice or regulatory compliance context, has truly been drinking. Legal or disciplinary action based solely on a positive EtG, or other test discussed in this Advisory, is inappropriate and scientifically unsupportable at this time. These tests should currently be considered as potential valuable clinical tools, but their use in forensic settings is premature.*

This statement was quickly seized-on by attorneys as evidence that ETG testing cannot be used for the purpose of monitoring and enforcing abstinence in affected individuals. Ironically, if one reads the fine print on the last page of the Advisory, it states, *"The content of this publication does not necessarily reflect the views or policies of SAMHSA or HHS."* This begs the question, "Then whose view does it reflect?" That notwithstanding, it is unfortunate that this Advisory was handed down in such a fashion. Such statements from government entities tend to circumvent the scientific peer-review process, and instead conjure up the specter of Big Brother.

The issues raised by the Advisory mostly pertain to the possibility of passive exposure and positive predictive value. These issues, of course, are related to the selection of a suitable threshold; one having the right balance of sensitivity and specificity.

These are all valid issues. However, the discussion in the Advisory of positive predictive value (PPV) is somewhat troubling. While the Advisory itself makes no attribution, the Wall Street Journal attributes the authorship to Dr. Kenneth Hoffman, the agency physician. In the Advisory, Dr. Hoffman seeks to point out "the critical role played by prevalence in determining positive predictive value", with the following quote: "Although the base rate of drinking among healthcare professionals required to refrain from drinking to maintain their license to practice is unknown, it is likely quite low." Ironically, earlier in the Advisory the author makes the statement, "Relapse is unfortunately rather common in alcohol treatment, especially in the early stages of recovery." Be that as it may, in support of the former statement the author references an article by Domino, et al. JAMA, 293(12), 1453-1460. In this study, Domino, et al. found the cumulative relapse rate at 5 years for alcohol in their cohort of health care professionals to have a mean of 24%. However, the author in making his point regarding PPV states, "in keeping with the 'quite low' assumption, if the prevalence of drinking is in fact **10 percent**…"*(emphasis added).* This assumption, likely chosen for the sake of demonstration, seems a bit disingenuous compared to Domino et al.'s value. Furthermore, the critical reader must consider how Domino, et al. arrived at their relapse rate. The authors determined relapse by, "self-report, behavioral monitoring, chemical monitoring, workplace monitoring, regulatory board reports, or other", with 31% of the detections of relapse being detected by chemical monitoring. While the nature of the chemical monitoring for ethanol is not provided, due to the fact that the cohort in the study entered the monitoring program between January 1, 1991 and December 1, 2001, it is likely that a large percentage, if not all, of the chemical monitoring for alcohol abuse was by the detection of ethanol in urine; the same inadequate monitoring process that ETG/ETS testing seeks to correct. If this is true, the actual relapse rate may in fact be far greater than 24%. Additionally, in this same discussion, the author, in a continuing attempt to make his point about PPV chooses by way of example a test with a sensitivity of 100% and a specificity of 90%. This is a somewhat specious selection of values. Even though the author refers to this as "excellent specificity", how many forensic toxicologists would seek to obtain a 100% sensitivity at the cost of a 90% specificity? Ninety percent specificity may be "excellent" for a medical-diagnostic test, but in forensic urine drug testing, where rights and liberties are at risk, specificity is almost universally preferred over sensitivity. Using these assumptions, Dr. Hoffman derives a PPV of only 53%. However, if one more realistically chooses and applies the numbers, a 24% relapse rate, and let's say an 80% sensitivity, and a 99%

DRUGS IN THE NEWS (CONTINUED)

specificity, the calculated PPV becomes 96%. If the relapse rate is actually 45%, the PPV jumps to 99%. This is the very reason forensic toxicologists choose higher thresholds over lower ones. I believe the author sought only to dramatize a point in his selection of values. However, I fear that in doing so, these values will be taken by attorneys to be representative of the actual PPV of ETG testing as applied in alcohol abstinence monitoring.

It is not my purpose to be overly critical of the Advisory, nor Dr. Hoffman. It is likely that some laboratories were overly enthusiastic in a rush to market with ETG testing. However, the issues addressed in the Advisory are not new territory in the realm of urine drug testing. There is very little difference between ETG/ETS testing in regard to passive exposure, sensitivity, specificity, and PPV, than other drug testing, such as second-hand marijuana smoke and poppy seed ingestion. One unique feature of ETG/ETS testing, however, is that it is somewhat disproportionately applied to health care professionals. While caution is always advised, this author sees the Advisory as too strongly-worded, and the subsequent discussion tends to provide attorneys with unrealistic and misunderstood statistics that will likely be used in attempt to discredit ETG and ETS testing entirely.

Passive exposure:

So what of passive exposure to ethanol? There is no doubt that beside alcoholic beverages there are plenty of opportunities to knowingly or unknowingly ingest or be passively exposed to ethanol. Mouthwash, medicines, perfumes and colognes, foods, and skin sanitizers are but a few of the products that a consumer may encounter that contain ethanol. An important aspect of any alcohol abstinence monitoring program should be patient education regarding products containing ethanol along with a signed agreement as to the understanding of this issue and the patient's intended abstinence from the same. Beyond that, several studies have been performed on common products to assess their potential for producing ETG and ETS positive results.

The following is intended to be an overview of some of the available studies and informal experiments on passive exposure to ethanol and is not intended to be exhaustive:

- Rohrig, et al. Letter to the Editor, Journal of Analytical Toxicology. Vol. 30, 2006, 703-704

Summary:
Four individuals applied Germ-X (62% ethanol) hand sanitizer to their hands in increments of 15, 30, and 60 minutes throughout the workday. The 60 and 30 minute interval participants did not demonstrate ETG at an LOQ of 50 ng/mL. The 15 min interval participants did not demonstrate ETG by midday, but one subject tested positive for ETG at the end of the day with a concentration of 62 ng/mL.

- Constantino, et al. Journal of Analytical Toxicology, Vol. 30, 2006, 659-662

Abstract:
Two studies were performed to evaluate the effect of alcohol containing mouthwash on the appearance of ethyl glucuronide (EtG) in urine. In the first study, 9 volunteers were given a 4-oz bottle of mouthwash, which contained 12% ethanol. They gargled with all 4 oz. of the mouthwash at intervals over a 15-min period. All urine samples were collected over the next 24 hours. Of 39 provided urine samples, there were 20 > 50 ng/mL, 12 > 100 ng/mL, 5 > 200 ng/mL, 3 > 250 ng/mL, and 1 > 300 ng/mL. The peak concentrations were all within 12 hours after the exposure. In the second study, 11 participants gargled 3 times daily for 5 days. The first morning void was collected. Sixteen of the 55 submitted samples contained EtG concentrations of greater than 50 ng/mL. All of them were less than 120 ng/mL. These studies show that incidental exposure to mouthwash containing 12% ethanol, when gargling according to the manufacturer's instructions, can result in urinary EtG values greater than 50 ng/mL. All specimens were negative for ethanol. The limits of detection and quantitation for the EtG testing were 50 ng/mL.

- Skipper, et al. Journal of Addiction Medicine. Vol. 3, No. 2, 2009, 1-5

Abstract:
Context: Ethylglucuronide (EtG), a minor metabolite of alcohol, is an important new marker that can detect alcohol use for several days or more after alcohol itself leaves the body. The test has rapidly gained widespread use where alcohol abstinence is desirable (e.g. in health professional monitoring programs, alcohol treatment programs, high schools, criminal justice settings, liver transplant clinics etc). As with any new test, it is important to understand its limitations, especially, it turns out, regarding non-beverage sources of alcohol that can affect EtG levels.

DRUGS IN THE NEWS (CONTINUED)

We describe a case and follow-up studies in which ethanol-based hand sanitizing gel (EthGel) caused elevated EtG levels for a pharmacist who disputed disciplinary actions by her licensing board.
Objective: To document that EthGel causes elevated EtG levels and to identify the route of absorption.
Design, Setting, Participants: Following discovery of the index case in 2004, twenty-four subjects were tested for EtG before and 30 min and 6 hours after exposure to EthGel in four groups: controls, skin exposure only, vapor exposure only, and both skin and vapor exposure. Breathalyzer was used to measure breath alcohol levels.
Results: EthGel caused elevated EtG and breathalyzer primarily from alcohol vapor. For "Skin Only", "Vapor Only", and "Both" Groups the mean EtG levels at 30 min were 42ng/mL (range 0-102ng/ml), 106ng/mL (18-328ng/ml), and 176ng/mL(0-348ng/ml) respectively. Breathalyzer levels of 0.01-0.02gm% persisted for up to 40-60 min in subjects with who had high EtG levels.
Conclusion: EthGel exposure, particularly inhalation of fumes, caused positive EtG levels. Subjects being monitored with EtG testing should be warned to avoid products containing alcohol, including fumes from EthGel and similar compounds. Further studies should be conducted to better quantitate the amount of ethanol absorbed from EthGel to determine if frequent use, particularly in poorly ventilated areas, might cause toxicity, especially for fetuses, where zero tolerance to alcohol is desirable.

- Jones, et al. United State Drug Testing Laboratory Research Monograph 2006.02

  Summary:
  Study participants applied 0.5 g of Purell (62% ethanol) gel to the hands once an hour for eight hours. One participant achieved a peak urinary concentration of 103 ng/mL of ETG at 8 hours. The same participant achieved a peak urinary concentration of 51 ng/mL of ETS at 4 hours. In a separate study a single participant applied 2 g of Purell to the hands and lower arms up to her elbows once an hour for eight hours. The authors note that this amount "was considered to be excessive." A peak urinary concentration of 713 ng/mL of ETG was achieved at 9 hours and a peak urinary concentration of 14 ng/mL of ETS was achieved at 12 hours.

- Jones, et al. United State Drug Testing Laboratory Research Monograph 2006.01

  Summary:
  Two participants used a 20 mL dose of Target Brand Antiseptic Mouthrinse (ethanol 21.6%) as described by package directions, swishing between the teeth for 30 seconds, once an hour for eight hours. One participant achieved a peak urinary concentration of 366 ng/mL of ETG at 6 hours. The same participant achieved a peak urinary concentration of 73 ng/mL of ETS at 8 hours.

- Rosano and Lin, Journal of Analytical Toxicology. Vol. 32, 2008, 594-600

  Abstract:
  Ethyl glucuronide (EtG) is a direct ethanol biomarker and U.S. Department of Health and Human Services has advised that specificity studies at low EtG levels are needed for distinction of ethanol consumption and incidental exposure. The authors report urinary EtG excretion with ethanol abstinence, dermal exposure and oral consumption. EtG concentration by sensitive liquid chromatography-tandem mass spectrometry measurement in 39 urine specimens from adult alcohol abstainers (< 10-62 µg/L) and in urine from 13 children (< 10-80 µg/L) indicates either unrecognized ethanol exposure or endogenous ethanol metabolism. With repetitive daily dermal exposure to hand sanitizer (60% ethanol) by 9 adults, EtG concentration ranged from < 10 to 114 µg/L in 88 first-morning void specimens. EtG excretion following a 24 g ethanol drink by 4 adults revealed maximum urine EtG concentration (12,200-83,200 µg/L) at 3 to 8 h postdose and an EtG detection window up to 25-39 hours, compared to an ethanol window of only 2 to 4 hours. Oral ethanol use also showed an increase in the percent (molar equivalent) ethanol

excreted as EtG with increasing oral ethanol doses. Human excretion studies show, 1. EtG detectable at low concentration (< 100 µg L) when ethanol use or exposures is not evident, 2. EtG concentration less than 120 µg/L in first morning specimens from adults with repeated dermal exposure to ethanol, 3. EtG levels maximally elevated within 3-8 h and above baseline for up to 39 hours after a 24 g ethanol drink, and 4. a dose-dependent increase in the percentage of ethanol excreted as EtG with increasing oral ethanol use.

- Ethanol in Food products – Dwain Fuller (Unpublished results)

Summary:
The claim of ingestion of rum cake was tendered as a defense to a positive ETG/ETS case brought before the State Board of Nursing. In an effort to establish or dispute the veracity of that claim the author prepared a "Bacardi Rum Cake" based on a recipe available off the internet. The cake contained ½ cup of Bacardi® Dark Rum (40% ethanol by volume) in the mix prior to baking at 325^{0}F for one hour. A separate glaze was prepared containing another ½ cup of Bacardi® Dark Rum. The rum was added to the boiling glaze mixture after removing it from the heat. GC headspace analysis of the cake and glaze demonstrated that the cake contained 11 mg/g residual ethanol and the glaze contained 61 mg/g residual ethanol. The cake weighed 956 g total and the total glaze weighed 415 g. The residual ethanol in the cake/glaze as intended to be served was 35.8 g total. Although significant amounts of ethanol could be consumed in this fashion, the fact that it is called a "Rum" cake and the fact that the presence of ethanol was readily apparent by smell and taste, would tend to exclude this as a legitimate source of unknowing ethanol ingestion. See Augustin, et al. Journal of the American Dietetic Association. 92(4), 1992, 486-488 for further residual alcohol in food product information.

Threshold Selection:

It is apparent that much of the validity and future acceptance of ETG and ETS testing lies in the proper selection of threshold values. The chosen thresholds must rule out all but the most unlikely scenarios for passive exposure, while retaining the advantage of a longer window of detection over urine ethanol. Several thresholds have been proposed. I will refrain from opining on this subject lest I be seen to be issuing my own advisory. I trust that we as toxicologists will work this out, as we have with other urine drugs of abuse.

Summary:
Urine ethanol testing has been around for a very long time, but ETG and ETS tests are rapidly taking precedence, particularly in the monitoring of healthcare professionals. Will one of these analytes supplant the others? My suggestion would be to perform all three tests, as well as a urine glucose test. By doing so one is armed with as much information as possible. As my mentor always said, "Forensic toxicology is not practiced in a vacuum." Look at the totality of the data and the circumstances, then form your opinion, not the other way around.

References:

Helliker, Kevin. Federal agency says urine-alcohol test isn't totally reliable. *Wall Street Journa*l, October 5, 2006

Medicolegal Aspects of Alcohol, Third Edition, James Garriott – Editor, Lawyers and Judges Publishing Company, Inc. 1996

Wu AHB, Sulkowski HA, McCarter YS. In-Vitro Production of Ethanol in Urine by Fermentation. Journal of Forensic Sciences. 40 (6), 1995

Kissack JC, Bishop J, Roper AL. Ethyl Glucuronide as a Biomarker for Ethanol Detection. Pharmacotherapy. 28(6), 2008, 769-781. *Author's note: This reference contains an apparent misstatement regarding the production of ETG as a result of urine glucose and yeast.*

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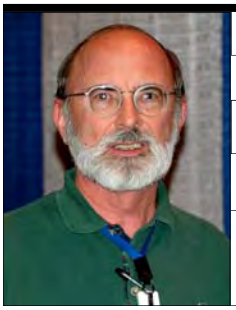
New Members Added in 2010

A "WELCOME" is sent to SOFT's newest members, listed below. The SOFT organization has rigorous standards of qualifications that must be met by new applicants, and a Congratulations is extended to each new member attaining the privilege of membership.

The very busy Membership Committee also deserves praise and acknowledgement for their personal time devoted to ensuring a successful future membership for SOFT. A very sincere THANK YOU is extended to the 2010-2011 Membership Committee:

- Dan Anderson, M.S. (Chair)
- Robert Osiewicz, Ph.D., D-ABFT
- Jeri Ropero-Miller, Ph.D., D-ABFT
- Pat Harding, B.S.

Samone Able
Linda Alvarado
Lori Arendt
Kristie Barba
Megan Barton
Leigh Bayer
April Bramlage
Kelly Burns
Patrick Campbell
Tara Catlin
Bryan Collins
Cynthia Coulter
Clint Crooks
Thomas David
Nathalie Derosiers
Sonia Drouin
Lorrine Edwards
Marianne Flanagan
Jenny Gallo
Rachel Garner
Michael Grommes
Oliver Grundmann
Lydia Harryman
Huda Hassan
Sarah Himes
Jeffrey Hurst
Linda Jackson
Lou Jambor
Sami Jamokha
Darrell Jeffries
Jeremy Jones
Jason Kennedy
Andrew Kippenberger
Scott Larson
Kristin Lartin
Cynthia Lewallen
Natalie Ludwig
Arnice Mack
Antoinette Madden
Brittany Malik
Tamara McCulloch
Tracy McKinnon
Poppy McLaughlin
Mark Milford
Eleanor Miller
Jonathan Moore
Anna Mudd
Patrick Murphy
Keith Nakagawa
Claire Naso
Michael Neerman
Brent Nelson
Theorelle Nottage
Kalen Olson
Mark Piper
Kevin Pitzer
Jocelyn Prendergast
Eva Reichardt
Lisa Reidy
S. Rutherfoord Rose
Molly Ross
Jennifer Runkle
Gregory Sarris
Gillian Sayer
Sara Schreiber
Douglas Searles
Emily Smelser
Szabolcs Sofalvi
Kengkaj Sukcharoenphon
Robyn Sweeney-Blaise
Mike Tanner
Erin Tracy
Monica Tramontin
Nicole Van Aken
Christopher Vance
Larry Washington
Lois White
Jillian Yeakel
Rachel Yinger



CASE NOTES

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

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

A FATALITY DUE TO A SUICIDAL INGESTION OF DOTHIEPIN

*Submitted by: **S. deQuintana**, Sdequintana@coroner.lacounty.gov and **D. Anderson**, Danderson@coroner.lacounty.gov, Los Angeles County Department of Coroner, Los Ange-*

Introduction:

Dothiepin (dosulepin, Prothiaden) is a tricyclic antidepressant approved for use in many countries, but not in the United States. It is typically prescribed in 25 or 75-mg tablets with daily dosages ranging from 75-300 mg. Plasma levels from therapeutic dosages range from 0.017 to 0.420 µg/ml.[1] Postmortem levels from therapeutic dosages have not been cited in the literature. However, dothiepin reported from a lethal overdosage were 17 µg/ml (heart blood), 4.1 µg/ml (femoral blood), 61 µg/ml (bile), 33 µg/ml (urine), and 0.89 µg/ml (vitreous).[2]

Case History:

A forty-one year old female with a history of depression and two prior suicide attempts was found unresponsive at her home. Her last known communication was approximately seven and one-half hours prior to discovery. A bottle of brandy and a drinking cup with red residue were found in the kitchen. A suicide note and multiple unopened pill packages (Prothiaden, 75mg) were also recovered from the scene. Postmortem interval was approximately eighteen hours. At autopsy the medical examiner collected heart blood, femoral blood, bile, urine, vitreous, and gastric contents; no anatomical cause of death was noted.

Toxicology Methods:

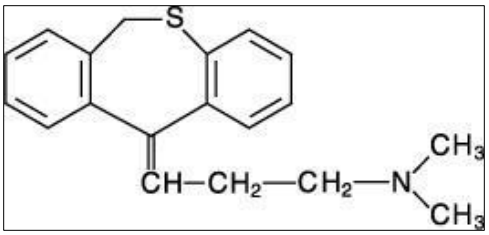
Heart blood from the case was screened for drugs of abuse (ELISA), volatiles (GC-headspace/FID), and basic pharmaceutical drugs. Basic drug screen was performed by a basic liquid-liquid chlorobutane extraction with acid back extraction and analyzed on GC-NPD and GC-MS. The extraction was validated specifically for dothiepin with a quantitative range from 0.10 to 3.0 µg/ml using carbinoxamine as an internal standard. Calibration curves were generated using quadratic regression and had a correlation coefficient (r^2) greater than 0.999. Dothiepin concentrations of 0.10, 0.50, and 2.0 µg/ml were extracted in triplicate over three days (n=27) in order to determine intra- and inter-run precision. The coefficients of variation (CV) for intra-run precision were 11.1%, 1.2%, and 5.0%; the CVs for inter-run precision were 11.2%, 5.9%, and 3.9%, respectively. Alternate matrices of bile and urine were supplemented with dothiepin at both a low (0.25 µg/ml) and high (1.0 µg/ml) level and compared against blood calibrators; no significant quantitative difference was noted.

Toxicology Results and Discussion:

Quantitation of dothiepin was performed by GC-NPD in all specimens with the following results (µg/ml).

Heart Blood	19
Femoral Blood	5.6
Bile	15
Urine	6.9
Vitreous	0.37
Total Gastric (mg)	279

The difference between the dothiepin concentrations in central and peripheral blood appears to represent postmortem redistribution; this finding is consistent with another dothiepin case cited in the literature as well as most tricyclic antidepressants in general.[2] The gastric contents of the case contained approximately four (75mg) dothiepin tablets that had yet to be absorbed – possibly contributing to the elevated central blood level. The vitreous concentration, which measured at 0.37 µg/ml, is very low, but is similar to another overdose case cited in the literature as well as consistent with the very large volume of distribution, 20-92 L/kg.[1,2] The case was also positive for ethanol (0.07g% heart blood, 0.04g% femoral, and 0.03g% vitreous.) The medical examiner ruled the case a suicide via dothiepin intoxication. While suicides by intentional overdosage are not uncommon, this case is unique due to the rarity of the drug itself.



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CLASSICAL COLOR TESTS FOR TODAY'S TOXICOLOGY LAB

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

The previous issue (Vol. 34, No. 2) presented 3 color tests useful in toxicology laboratories for screening purposes and quantitations. This report will give details on the **Bratton-Marshall** test for primary aromatic amines (1). This test is usually done on urine or aqueous gastric fluid because of a relative high detection limit.

Bratton-Marshall (B-M) Reagents:

(1) Aqueous 15% trichloroacetic acid (TCA, pptn. reagent for serum or blood).
(2) Aqueous 0.1% sodium nitrite (stable 6 months).
(3) Aqueous 1% ammonium sulfamate (Bratton reagent).
(4) Aqueous 0.1% N-(1-naphthyl) ethylenediamine 2 HCL. (Marshall rgt.); shelf life at room T is approx. 3 months.

Several sulfonamides, aniline, and *p*-aminobenzoic acid (PABA) react by direct treatment with the reagents as described below. Hydrolysis followed by **B-M** reagents will give reactions for thiazides and some of the benzodiazepines (see Table 1).

Free Aromatic Amine (sulfonamides, PABA):

To 0.5 ml serum add 3 mL of 15% TCA, vortex and centrifuge; transfer aq. to clean glass TT and add 0.5 mL 1% $NaNO_2$; wait 5 min.; add 0.5 mL ammonium sulfamate; wait 5 min. add 0.5 mL of Marshall rgt. Stand the tubes in the dark for 10 min. Read absorbance at 540 nm. A low sulfonamide control (sulfanilamide) is 10 mg/L. The usual therapeutic range in blood and serum is 10 – 200 mg/L.

Acid Hydrolysis Method for Bentiromide:

To 0.5 mL urine add 0.5 mL of 6N HCL and hydrolyze at 90- 95 C for 45 min. Various benzodiazepines will be converted to primary aromatic amines and bentiromide will be converted to PABA which will then react as above.

Thiazides Base Hydrolysis and Screen:

To 0.5 mL of urine add 0.2 mL of pH 2 phosphate buffer and 2.5 mL of ethyl acetate (EtOAC). Vortex and centrifuge, transfer 2 mL of EtOAc to 2nd TT and add 1 mL of 6N NaOH; vortex, centrifuge, aspirate the EtOAc away and place tubes in an ca. 80 C water bath for 10 min. Next neutralize the hydrolyzed tubes with a few drops of conc. HCL and then to 0.5 mL add 0.5 mL 15% TCA (centrifuge to if unclean), then 0.5 mL of the nitrite, sulfamate, and naphthyl reagents in order with 5 min. between each addition. A purple color develops within 5 min. after the last reagent is added.

The drugs in Table 2 are diuretics; triamterene may be recognized by the urine fluorescence under UV 366 nm light; spironolactone has native fluorescence, but not as intense as triamterene.

Sulfa drug concentrations are well above 10 mg/L in urine after therapeutic use and can be detected in blood and serum by the **B-M** screening given here. Thiazides are detected in 2 -20 mg/L quantities in urine after therapeutic use. It is important to rule in or out acetaminophen which will hydrolyze in acid to produce *p*-aminophenol, a **B-M** reacting substance (see previous issue for screening test).

References

- Sunshine, in **Methodology for Analytical Toxicology,** CRC Press, p. 352, 1975.

Table 1. Classes of Bratton-Marshall Reacting Substances

Primary Aromatic Amines		**Require Hydrolysis to React**
		Benzodiazepines
Aniline	Sulfapyradine	Chlordiazepoxide
p-Amino salicylate	Sulfaquinoxaline	Oxazepam
Sulfacetamide	Sulfathiazole	Clorazepate
Sulfadiazine	Sulfasomidine	Nordiazepam
Sulfamerazine	*p*-Aminobenzoate**	**Thiazides**
Sulfamethoxazole		Chlorothiazide
Sulfapyridine		Hydrochlorthiazide
p-Aminophenol*		Metolazone
		Furosemide

*Produce from acetaminophen by acid hydrolyis.
**From bentiromide by acid hydrolysis.

Table 2. Diuretics and Related Drug Substances & B-M Reaction

Diuretics	**B-M Response**	**Chemical Class**	**Other Notes**
Chlorothiazide	+ after base hyd.	Thiazide	Diuretic
Hydrochlorthiazide	+ after base hyd.	Thiazide	Diuretic
Other Chlorothiazides	+ after base hyd.	Thiazide	Diurtics
Furosemide	weakly + after hyd.	Thiazide	Diuretic
Acetazolamide	negative	non-aromatic	Sulfonamide
Triamterene	negative	base	Strong Fluoresc
Ethacrynic acid	negative	acidic	Strong UV Abs.
Chlorthalidone	+ after base hyd.	neutral	Diuretic

NEW DRUGS

Section Editor, Dan Anderson, M.S., FTS-ABFT (danderson@coroner.lacounty.gov)

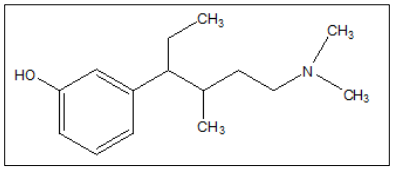
NEW DRUG: TAPENTADOL (NUCYNTA®)

Submitted by: ***Dan Anderson,*** *danderson@coroner.lacounty.gov;* ***Sarah deQuintana,*** *sdequintana@coroner.lacounty.gov, Los Angeles County Dept of Coroner, Los Angeles, CA 90033;* ***Karen Hart Valencia,*** *karen.hart@adfs.alabama.gov, Alabama Department of Forensic Sciences, Hoover, AL 35244*

In the March 2009 ToxTalk, Waugh and Kraner described tapentadol as a new centrally acting oral analgesic developed by Johnson & Johnson that was approved by the FDA in November 2008 for the treatment of moderate and severe acute pain.[1] In June 2009, the DEA listed tapentadol as a schedule II drug which then became available as Nucynta® for prescription on the US market in immediate-release oral doses of 50, 75, and 100 mg.[2] Reportedly, tapentadol is structurally similar to tramadol and has a potency between that of tramadol/codeine and morphine. The single, parent compound acts as both a mu-opioid receptor agonist and a norepinephrine reuptake inhibitor. Its dual mode of action provides analgesia at similar levels of more potent narcotic analgesics such as hydrocodone and oxycodone with more tolerable side effects.[3] Although Waugh and Kraner suggested tapentadol would have to be detected as a trimethylsilyl derivative, both the Alabama Department of Forensic Sciences and the Los Angeles County Department of Coroner detected tapentadol in their casework utilizing a general basic drug screen with commonly employed instruments such as GC/NPD and GC/MS.

General Information

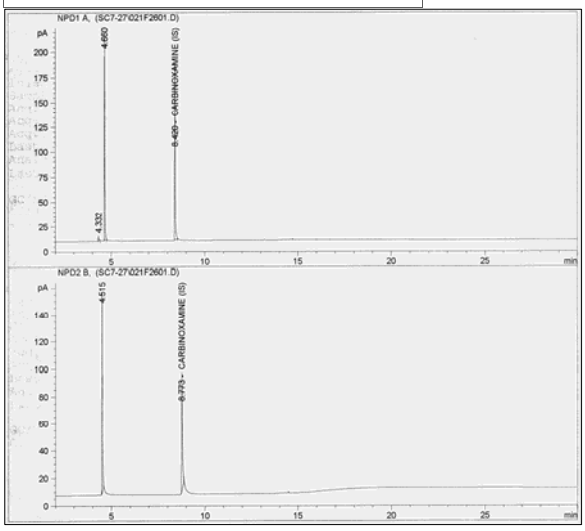
IUPAC name:	3-[(1*R*,2*R*)-3-(dimethylamino)-1-ethyl-2-methylpropyl]phenol hydrochloride
Common name:	Tapentadol or Nucynta®
Chemical formula:	$C_{14}H_{23}NO$
Molecular weight:	221.339 g/mol
CAS number:	175591-23-8
Rx dosage:	50, 75, 100 mg tablets
Availability:	1 mg/ml methanol solution purchased from Cerilliant® Corp. (Round Rock, TX), T-058



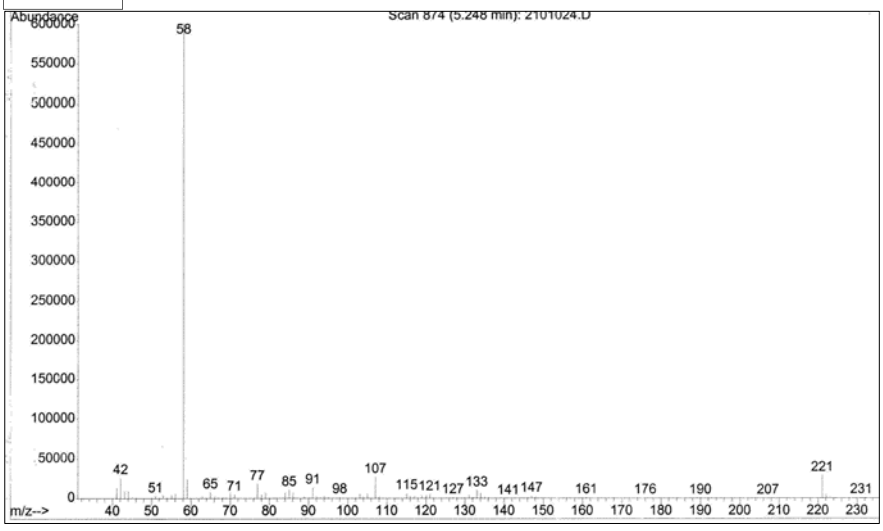
Toxicology

Extraction:	N-butyl chloride L/L basic drug extraction with a 0.1 N HCL acidic back extraction
Detection:	GC/NPD and GC/MS
Ions:	58, 107, 221, 133 m/Z
Elution order:	Bupropion, **Tapentadol,** Meperidine, Fluoxetine, Diphenhydramine, Tramadol

GC/NPD (ZB-1 and ZB-35)



GC/MS



NEW DRUGS (CONTINUED)

Case Studies

Alabama Postmortem Case Study:

A 19 year old female decedent (5'10", 80 kgs), newly married (~3 months), was found unresponsive in the residence by her husband after returning from a day of work. The husband stated that she was taking some unknown OTC medicine for allergies. Medications bottles belonging to her husband (temazepam, venlafaxine, tapentadol, pregabalin, tizanidine, and baclofen) were found at the scene, but no information as to how full/empty was provided. An autopsy was performed and the pathologist noted no trauma, pulmonary edema, froth in the upper and lower airways and bronchopneumonia. Autopsy specimens were submitted to the laboratory and the following positive toxicology results were obtained:

	Subclavian Blood	**Urine**
Phentermine	0.059 ug/ml	Present
Carboxy-THC	0.0073 ug/ml	-
Temazepam	Not Detected	Present
Tapentadol	*2.0 ug/ml	Present
	* Detected by GC/MS prior to quantitation performed by NMS Labs, Willow Grove, PA	

The cause of death was determined to be multiple drug toxicity; the manner of death was ruled an accident.

Los Angeles Postmortem Case Study:

A 45 year old male decedent (5'9", 81 kgs) was found unresponsive in his residence after a night of drinking with friends. He was on several pain medications due to an accident he sustained six months prior to his death. An autopsy was performed and was unremarkable. Autopsy specimens were submitted to the laboratory and the following positive toxicology results were obtained:

The pathologist determined the cause of death to be multiple drug intoxication and the manner of death to be an accident.

	Heart Blood	Femoral Blood	Vitreous
Ethanol	0.18 g%	0.19 g %	0.22 g%
Cyclobenzaprine	<+ 0.10 ug/ml	-	-
Diazepam	0.24 ug/ml	-	-
Nordiazepam	0.38 ug/ml	-	-
Amphetamine	0.20 ug/ml	-	-
Oxycodone	0.13 ug/ml	-	-
Tapantadol	*~ 0.44 ug/ml	*~ 0.27 ug/ml	-
	*GC/NPD Methodology not completely validated.		

Discussion

Tapentadol is a new analgesic used in pain management which has recently been encountered in at least two Toxicology Laboratories. Following oral or IV administration of 60 mg tapentadol, maximum blood concentrations were 0.05 ug/ml (0.027 – 0.073) and 0.30 ug/ml (0.251-0.349), respectively. Efficacy of tapentadol for pain relief was in the range of 0.005-0.30 ug/ml.[4]

The tapentadol quantitation in the Alabama case study was performed by NMS Labs with LC/MS/MS technology and a calibration range of 0.0005-0.25 ug/ml.[4] The tapentadol measured in the subclavian blood (2.0 ug/ml) of the case was more than six times that of the cited clinical therapeutic concentration. This level along with the autopsy findings led the pathologist to declare the case an overdose and the manner an accident.

The Los Angeles case study measured tapentadol at ~0.44 and ~0.27 ug/ml, heart and femoral blood respectively. Although these levels appear to be in the higher edges of a clinical therapeutic range, it may represent what will be determined as a tapentadol postmortem therapeutic concentration with future casework. The concentration differences between the central and peripheral blood may represent some postmortem redistribution, but again, more casework is needed. Overall, the case was determined to be a multiple drug intoxication due to the various respiratory depressants (ethanol, cyclobenzaprine, nordiazepam, oxycodone, and tapentadol) detected and the mode as an accident. Overall, although tapentadol can be detected with LC/MS/MS technology, it can easily be seen with a basic liquid/liquid drug extraction and detected with commonly employed instruments such as GC/MS and GC/NPD. As there are more cases with tapentadol, the delineation between therapeutic and toxic/lethal will become more apparent and these two case examples may need to be re-evaluated in regards to mode of death.

References

1. Richards-Waugh, L. and Kraner, J. New Drugs: Tapentadol. ToxTalk, 2009: Volume 33, Issue 1, Pg 20.

2. Drug Enforcement Administration, Department of Justice. Schedules of controlled substances: placement of tapentadol into schedul II. Final rule. Fed Register, 2009 May 21: 74(97) 23790-3.

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TOXICOLOGY - BITS & PIECES

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

AAFS/ SOFT JOINT DRUGS & DRIVING COMMITTEE

Submited by Jennifer Limoges, M.S. Committee Chair

The SOFT/AAFS Drugs & Driving Committee will be supporting a "Drugs & Driving" section on the new SOFT website to provide a centralized resource of drug impaired driving information to toxicologists. Thanks to the efforts of many committee members for working on the content over the past several years. And many thanks to Matt Juhascik for doing all the website work.

For the upcoming meeting in Richmond, the committee is sponsoring the workshop "Marijuana Pharmacology - Practical Applications for the Forensic Toxicologist" on Monday, October 18, co-chaired by Amy Cochems and Fiona Couper. The Drugs & Driving Special Session coordinated by Mike Wagner will be held Thursday morning. The committee meeting will be held Monday evening, right after the workshops, and is always open to anyone who's interested in our activities.

Looking forward to seeing everyone in a few short weeks!

NOTICE:

SWG-TOX has a new website . . .

www.SWGTOX.org

AAFS - TOXICOLOGY SECTION NEWS

Submitted by Phil Kemp, Ph.D. and Ruth Winecker, Ph.D.

The Toxicology Section meeting planners for the 2011 AAFS meeting in Chicago (February 21 – 26, 2011) are working hard to put together a great program. Ruth Winecker, Scientific Program Chair (winecker@ocme.unc.edu) and Workshop Chair, Loralie Langman (langman.loralie@mayo.edu), are currently scheduling presentations and social events. They have received a number of good proposals and abstracts, meaning the review process is underway. They are always looking for volunteers to moderate sessions and help in other ways. Please contact them and volunteer to help out where you can. Program notes thus far include an open session and presentation to discuss the formation of the new Scientific Working Group on Forensic Toxicology (SWG-Tox) and special sessions in drugs and driving and pediatric toxicology as well as a joint session with path/bio. Finally, the program planners are pleased to announce, that we have secured Pulitzer Prize winning science writer and New York Times best-selling author, Deborah Blum for the Annual Lectureship in Toxicology.

We hope to see you all in Chicago for what is going to be a fantastic program.

NATIONAL SAFETY COUNCIL— COMMITTEE ON ALCOHOL AND OTHER DRUGS

Submitted by Laura Liddicoat, B.S., NSC Secretary

The Executive Board of the National Safety Council's Committee on Alcohol and Other Drugs will meet at 1pm on Friday, October 22, 2010 at this year's SOFT conference in Richmond. The meeting is open to all members and interested guests. Please refer to the SOFT 2010 program for the location of the meeting.

Committee officers for 2010 are:

- Mack Cowan – Chair
- Dennis Canfield – Vice Chair
- Laura Liddicoat – Secretary

The latest recipient of the 2011 Robert F. Borkenstein Award will be announced. To be a candidate for this prestigious award, individuals must have a minimum of 25 years active service in the area of alcohol/drugs and traffic safety, contributed to that field to a degree that their achievements are nationally recognized and have a minimum of 20 years of active and productive involvement as a volunteer with the National Safety Council.

To access CAOD policies, previous Borkenstein Award recipients or learn more about the committee go to www.nsc.org and type in "CAOD" under the NSC search engine.

ABFT NEWS

Submitted by Marina Stajic, Ph.D., DABFT, President

The annual ABFT certificant ceremony and reception will be held during the SOFT meeting in Richmond, VA on Tuesday, October 19, 2010 from 7 pm to 8 pm. The invitation is extended to the directors of ABFT accredited laboratories who are not ABFT certificants.

CONGRATULATIONS to our colleagues who have successfully met all the requirements and joined the ranks of ABFT certificants since March 2010:

- **Matthew P. Juhascik, PhD, DABFT**
- **Robert M. White, Ph.D., DABFT**

CONGRATULATIONS to the staff of the **University of Massachusetts Memorial Medical Center, Forensic Toxicology Laboratory, Department of Hospital Laboratories**, Worcester, MA, on successfully meeting all the ABFT requirements for laboratory accreditation.

REMINDERS:

►Effective January 1, 2011, all accredited laboratories will be required to submit an annual accreditation fee of $ 3,500 regardless of whether it is a mid-cycle or on-site inspection year. A separate application fee will no longer be required from accredited laboratories.

►Effective January 1, 2010, all ABFT accredited laboratories are required to subscribe to both the FTC (Toxicology) and the T-series proficiency tests of the College of American Pathologists (CAP). Laboratories are required to complete all challenges for the FTC set for which the laboratory has established, validated methods. All of the laboratory's usual screening and confirmation tests need to be completed for the T-series and for those quantitative challenges for which the laboratory has routine methods Results must be returned to CAP within the reporting period. In addition, laboratories must subscribe to the CAP AL1 Whole Blood Alcohol program or comparable program (s) with an equivalent number of challenges for ethanol and related volatiles. Laboratories are encouraged to continue participation in any other proficiency test programs to which they currently subscribe.

►ABFT Board of Directors has restructured the certification application, re-certification application and continuing education fees. Effective January 1, 2009, a non-refundable fee of $150 is applied to all new applications, replacing the previous $ 300 fee. The re-certification fee of $300 is no longer required every five years. Instead, a fee of $ 100 is required with the annual submission of continuing education credits. Certificants still need to submit a re-certification application every five years in order to remain in good standing.

►ABFT no longer has the USA/Canada residency requirement for certification. All other requirements remain the same. The examination is administered (in English only!) twice each year, at the American Academy of Forensic Sciences (AAFS) Annual Meeting and at the Society of Forensic Toxicologists (SOFT) Annual Meeting. Additionally, a candidate may request to have an examination administered at a different location under the direction of a member of the Board of Directors. We welcome and encourage our international colleagues to consider applying for ABFT certification. Please visit www.ABFT.org for more information.

American Board of ABFT Forensic Toxicology ™

NATIONAL ISSUES

UPDATE ON THE FORENSIC TOXICOLOGY COUNCIL (FTC)

Submitted by Barry K. Logan, Ph.D., D-ABFT, Chair, FTC

The FTC is the body formed to coordinate the efforts of our various professional organizations (SOFT, AAFS, ABFT) with respect to monitoring and responding to legislative issues, collecting and disseminating information and ensuring that forensic toxicology as a profession is independently represented in the changing regulatory and oversight environment following from the 2009 NAS report. The FTC members are the current senior office holders in each of the above organizations, as well as the Consortium of Forensic Science Organizations (CFSO) delegates from SOFT and ABFT. The FTC has periodic meetings telephonically and gets updates on meetings with legislative staff, the CFSO, and other interested parties as Congress works towards reforms of the forensic sciences.

Following the release of the National Academies of Science report on "Strengthening Forensic Science in the United States: A Path Forward" in February of 2009, the US Senate Judiciary committee chaired by Senator Patrick Leahy (D-VT), has held a number of hearings, and senate staff have met separately with interested groups, including CFSO, The Innocence Project, The National Association of Criminal Defense Lawyers, and the National District Attorney's Association, among others. These hearings took place during the spring of 2010. After considering the input on how the reform can best be implemented, and how it will be overseen, governed and funded, the Senate committee produced a draft outline of what would be covered in legislation (www.SWGTOX.org).

The proposal would establish a Forensic Science Commission (FSC) with members to be appointed by the President. The role and composition of the Commission is a subject of some debate, but would generally have broad authority to set and to designate standards and accrediting and certifying organizations, to ensure that only qualified individuals practice forensic science. Down to what level this would apply is not specified in the draft language and would likely be within the discretion of the FSC. In toxicology for example it could mean anyone who signs reports, testifies or directs a laboratory would have to be certified. The priorities identified in the draft legislative outline include the following:

- Mandatory accreditation for all laboratories receiving Federal Funds. This would include any federal grant funds, administered for example through DOJ, NIJ or other law enforcement grants.
- Mandatory certification for practitioners.
- Designation of bodies to set appropriate standards for forensic disciplines. This is one of the reasons it was so important to form the SWGTOX, as these groups are favored by many to provide this role. As described elsewhere, SWGTOX is off to a good start and now has some substantive goals and activities, and working meetings in the planning stage.
- Promoting a comprehensive strategy for increasing and improving peer-reviewed scientific research related to the forensic disciplines.
- Promoting the development of standards, best practices and quality assurance.

The FTC members and CFSO delegates have been able to educate legislative staff about the state of the science in forensic toxicology. The FTC recently prepared a briefing document on forensic toxicology, which is posted on the SWGTOX website (www.SWGTOX.org), and has been provided to congressional staff. The document is designed to highlight the strengths, opportunities for growth in our field and how we are positioned with respect to the priorities foreseen in legislation, and listed above.

In September, we had a face-to-face meeting with key Senate staff to answer questions about our progress, and to emphasize three main concerns.

1. **Accreditation**:
   Accreditation promotes uniformity in testing standards, good science, and equal justice, and we strongly support it for all laboratories doing forensic toxicology. Unlike most other forensic disciplines, forensic toxicology's close relationship to clinical toxicology results in many private sector, hospital,

National Issues

FTC Update (Continued)

and public health laboratories, not just crime laboratories, performing a large amount of this work. Consequently, there are a range of appropriate accreditation standards in forensic toxicology, depending on the application. Legislation should not lock us into any one, but select those best suited to the purpose. e.g. ISO 15189 or 17025 for medical laboratories or testing and calibration laboratories respectively, or the SAMHSA regulations for workplace urine drug testing. Accreditation can be encouraged through the provision of grants both to achieve accreditation and for laboratory infrastructure and equipment. Nothing in legislation should interfere with the congenial relationship that exists between government, academia, and the private sector in delivery of forensic toxicology services.

2. **Certification:**
Certification should create a standard of professionalism and qualification. It can be linked to accreditation, e.g. requiring key staff in accredited labs to be certified, and incentivized the same way as accreditation. Existing standards can be built on, and certifying bodies are developing appropriate levels of certification for all qualified people working in the field with varying levels of education and expertise, and complexity of job duties. Also, since many toxicology laboratories employ technicians, and have certifying scientists or the lab director signing reports and going to court, certification should be applied at that level.

3. **Research needs:**
While toxicology benefits from decades of scientific research and development, and discoveries in medicine, pharmacology and academic science, it is essential to the future of the field that this research continues and is supported. More sensitive and specific tests, validation of new methods and technologies, better understanding of drug effects, all support improvements in death investigation, human performance and workplace drug testing. After reviewing the input from all the interested parties, Senator Leahy's committee will prepare another draft this Fall with more details of how some of these reforms could be implemented. Eventually these will be proposed in the form of legislation, with associated funding for the consideration of the Congress as a whole. Watch this space for updates as we work through this lengthy process in the months ahead. Please forward any questions about this process to me (barry.logan@nmslabs. com) or to the officers of your respective organizations in SOFT, AAFS, or

Scientific Working Group for Forensic Toxicology—SWGTOX

Submitted by Bruce A. Goldberger, Ph.D., DABFT

SWGTOX was created by the Forensic Toxicology Council about one year ago with a mission to investigate, analyze, develop and disseminate consensus in standards of practice for forensic toxicology. The scope of SWGTOX activities includes post-mortem and human performance toxicology.

The Co-Chairs of SWGTOX met over the summer to write the SWGTOX Bylaws. The Bylaws serve as SWGTOX's rules and regulations regarding matters such as objectives, scope, committee structure, membership, meetings, voting, and most importantly, the process for the approval of the "Standards for the Practice of Forensic Toxicology". The Bylaws, as well as the current SWGTOX Program Document, are posted at www.SWGTOX.org.

To date, the Co-Chairs have received little feedback regarding SWGTOX and would encourage all practicing forensic toxicologists to visit the SWGTOX web-site and review the material posted there. The final product will influence your future practice of forensic toxicology. Please address your comments to one or more of the SWGTOX Co-Chairs.

The SWGTOX committees will be meeting at the SOFT meeting on Monday, October 18, 2010, in addition to December 2010, contingent upon funding. In addition, the SWGTOX Co-Chairs are planning to brief the forensic toxicology community at an open session in Chicago at the annual meeting of the American Academy of Forensic Sciences. Please note that all SWGTOX committee meetings are open to SWGTOX members only.

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CFSO UPDATE

Submitted by Peter Stout, Ph.D., DABFT

For the pending Senate legislative response to the NAS report, there have been many continued discussions, but more significant action has been delayed by some unrelated political matters over the summer, such as the BP oil spill and Supreme Court nominations. In the meantime, the CFSO has begun discussion with the House Judiciary Committee Members as they have become more interested in the process unfolding, and plan to begin drafting their own legislation. Additionally, there have been discussions with Senate Judiciary Minority Members and with Senate Appropriations staff about their positions on the report and legislative response. For any kind of legislation to actually pass, both the Senate and House Judiciary Committee will have to pass their own individual bills and then a reconciliation process of the two Bills must take place. This will take some time as the Majority and Minority members, as well as the House and Senate, have differing positions on some key provisions in the NAS report. Further, once the Authorization Bill is passed, it will need to be funded by the Appropriations Committee.

The issue of where to house the new Office of Forensic Science continues to be debated on the Hill by all parties involved, with proponents on either side of the debate, making their positions known, to include us. However, the Senate Majority wants to ensure there is some separation of law enforcement from the science in forensics and that is the only documented position that exists from Congress right now, so we can only report on that document. Debate continues in the House and among Republicans as to the role that NIST will play in the new office and the outcome of the debate is currently undetermined, but are involved in the discussions with all staff.

We have continued to participate in meeting with CFSO and legislators to educate on matters of importance to toxicologists. As recently as September 3rd, we met with Senate Judiciary Committee staffers to discuss toxicology specific concerns of highlighting that ISO 17025 may not be the best fit international standard, and flexibility for other standards should be considered. The staff was very open and clearly understood and agreed with our position. Additionally, we reinforced that while forensic toxicology has a lengthy history of research, it is a dynamic field that must continue to have research efforts supported to continue to address new technologies, drugs, and knowledge.

Lastly, the State and Local Representatives to the Interagency Working Groups (IWGs) of the Whitehouse Subcommittee on Forensic Sciences have been largely finalized and have started participating in meetings. We know at least that Sarah Kerrigan and Bill Anderson have been appointed to participate.

As always, we encourage you to remain active and involved in this historic discussion. It is a long process and difficult to remain motivated about. But, it will have lasting impacts for how we practice forensic toxicology for many years to come.

SYNTHETIC CANNABINOIDS – DEA REQUEST FOR INFORMATION

Submitted by Minh Dang, M.S., DEA Headquarters, Springfield, VA (ODE@doj.gov, 202-307-7183)

The Drug Enforcement Administration (DEA) is actively pursuing the emergency scheduling of the synthetic cannabinoids found in Spice. Spice is a smokable herbal blend marketed as legal marijuana. The effects of these substances alone or on plant material have been reported to be cannabis-like and highly potent. These substances are functionally similar to delta-9-tetrahydrocannabinol (Δ9-THC) and reported effects are consistent with their high affinity for the cannabinoid receptor 1 (CB1). The American Association of Poison Control Centers reported, as of August 20, 2010, poison control centers have received 1,056 calls relating to these products. The National Forensic Information System (NFLIS) has received over 200 reports of seizures related to these cannabinoids. Kansas, Georgia, Kentucky, Alabama, Tennessee, Louisiana, Missouri, Hawaii, Arkansas, Illinois and Mississippi have passed laws to control these synthetic cannabinoids. These herbal blends have been identified and purported to contain synthetic cannabinoids. Products found to contain at least one synthetic cannabinoid include, but are not lim-

National Issues

Synthetic Cannabinoids-DEA Request for Information (Continued)

ited to Blaze, Dream, Genie, Hard Core, K2, Magma, Serenity, Spice, Spike 99, Ultra Chronic, and Zohai.

Currently, scientific information regarding the pharmacology and toxicology of these synthetic cannabinoids in humans is limited, and the few animal studies provide evidence of short- and long-term health effects. These cannabinoids include but are not limited to:

- **HU-210** [(6a*R*,10a*R*)-9-(hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-2-yl)-6a,7,10,10a-tetrahydrobenzo[c]chromen-1-ol]
- **CP 47,497** [2-[(1*R*,3*S*)-3-hydroxycyclohexyl]-5-(2-methyloctan-2-yl)phenol)]
- **Cannabicyclohexanol (CP 47,497 C8 homologue)** [2-[(1*R*,3*S*)-3-hydroxycyclohexyl]-5-(2-methylnonan-2-yl)phenol)]
- **JWH-018** [1-pentyl-3-(1-naphthoyl)indole]
- **JWH-073** [1-butyl-3-(1-naphthoyl)indole]
- **JWH-200** [1-[2-(4-morpholinyl)ethyl]-3-(1-naphthoyl)indole]
- **JWH-250** [1-pentyl-3-(2-methoxyphenylacetyl)indole]
- **JWH-081** [1-pentyl-3-[1-(4-methoxy)naphthoyl]indole]

The DEA continues to gather information on the pharmacology, toxicity, and abuse of synthetic cannabinoids and products containing these substances. Any information associated with the biological response occurring from the episode, data describing toxic effects from exposure to these agents occurring in humans or animals, risk assessment, identification of these substances to establish prevalence and trends, and suspicion of poisoning connected to patient or postmortem samples would be greatly appreciated.

Procedures for Transportation Workplace Drug and Alcohol Testing Programs

Published August 16, 2010 in Federal Register is a Department of Transportation Final Rule:

Submitted by Jim L. Swart, Director, Office of Drug and Alcohol Policy and Compliance

The following is a summary of the Final Rule:

1) The Department is required by the Omnibus Transportation Employees Testing Act (Omnibus Act) to follow the HHS requirements for the testing procedures/protocols and drugs for which we test.

2) Primary laboratory requirements in this final rule include:

* Testing for MDMA (aka. Ecstasy);
* Lowering cutoff levels for cocaine and amphetamines;
* Conducting mandatory initial testing for heroin;

3) The Department brought several testing definitions in-line with those of HHS.

4) Each Medical Review Officer (MRO) will need to be re-qualified – including passing an examination given by an MRO training organization - every five years. The Final Rule eliminated the requirement for each MRO to take 12 hours of continuing education every three years.

5) An MRO will not need to be trained by an HHS-approved MRO training organization as long as the MRO meets DOT's qualification and requalification training requirements.

6) MRO recordkeeping requirements did not change from the five years for non-negatives and one year for negatives.

7) The Final Rule does **not** allow the use of HHS-Certified Instrumented Initial Testing Facilities (IITFs) to conduct initial drug testing because the Omnibus Act requires laboratories to be able to perform both initial and confirmation testing but IITFs cannot conduct confirmation testing.

8) The Final Rule is effective October 1, 2010.

You can view the Final Rule at the Federal Register's website: http://edocket.access.gpo.gov/2010/pdf/2010-20095.pdf.

The document will also be available on the ODAPC website later today at http://www.dot.gov/ost/dapc.

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FEDERAL WORKPLACE DRUG TESTING UPDATE

Submitted by Charles LoDico, M.S., DABFT

Workplace drug testing occurs both in the federally regulated and non-federally regulated (private industry) arenas. In the federally regulated workplace, urine drug testing is mandated by the Department of Health and Human Services (HHS) for Federal agency employees in testing designated positions and for the Department of Transportation (DOT) regulated transportation employers. In private industry, workplace drug testing has expanded in scope over the last 20 plus years to include testing for other drugs than those listed in the Mandatory Guidelines, collecting and testing other types of specimens (hair, oral fluid, and sweat), and incorporating drug testing into situations other than workplace, such as for pain management and impaired professionals.

Historically, workplace drug testing was created in 1986 with the enactment of Executive Order 12564 which established a "drug-free workplace program". In 1987, Public Law 100-71 was passed which outlined the general provisions for drug testing programs within the Federal agencies. In 1988, the Mandatory Guidelines for Federal Workplace Testing Programs was published. The Mandatory Guidelines set scientific and technical standards for drug testing of Federal agency employees in testing designated positions and for establishing criteria for certification of forensic drug testing laboratories. Workplace drug testing expanded with the Congressional passage of the Omnibus Transportation Employee Testing Act of 1991 (Omnibus Act) which required the DOT to adhere to all the scientific aspects of the Department of Health and Human Services (HHS) Mandatory Guidelines. Since the first 1988 publication of the Mandatory Guidelines, there have been a total of five revisions to these Guidelines. The most recent revision to the Guidelines was published in November 2008 with an implementation date of October 1, 2010.

The Substance Abuse and Mental Health Administration (SAMHSA) is the agency within HHS which has the delegated authority for the federal workplace drug testing program. The Division of Workplace Programs (DWP) within SAMHSA has the administrative responsibility for managing the oversight of the Federal Workplace Drug Testing Programs and the National Laboratory Certification Program (NLCP).

The DWP staff has worked diligently to complete and meet the required tasks necessary for the October 1, 2010 implementation of the Guidelines. One major task was the revision of the current Federal Custody and Control Form (CCF) to include the new drug analytes (MDMA, MDA, and MDEA), the Instrumented Initial Test Facility (IITF), and the designation of the testing authority. The revised Federal CCF is in the clearance stages for approval by the Office of Management and Budget (OMB) and will meet the October 1, 2010 deadline. Another major task was to update and revise the Medical Review Officer (MRO) Manual and the Urine Specimen Collection Handbook for Federal Agency Workplace Drug Testing Programs to be consistent to the 2008 Guidelines changes. DWP will publish in the Federal Register in September the list of HHS-approved entities that certify MROs. All these work products will be available to the public on the DWP website **(http://www.drugfreeworkplace.gov/).**

To prepare the federal agency Drug Program Coordinators (DPC) for the October 1st implementation of the revised Guidelines, DWP staff is conducting numerous web conferencing training sessions for the DPCs on the Guideline changes. In addition, a web-based resource center for the DPCs was created to house the training presentations and answers to the DPC's submitted questions.

For the NLCP, DWP has worked closely with RTI International, the current NLCP contractor, to prepare the HHS-certified laboratories for the revised Guidelines implementation. Special proficiency testing challenges were prepared to assess the laboratories' accuracy with respect to the new analytes and lower cutoffs. The NLCP inspection checklists have been updated to reflect the changes in the revised Guidelines. In addition, web-based NLCP inspector training modules are being prepared to assist inspectors in assessing laboratory compliance with the Guidelines changes. Further details on all these NLCP updates will be provided at the Society of Forensic Toxicologists (SOFT) annual meeting in Richmond, Virginia this October.

The DWP staff is your most important resource for any questions you may have regarding workplace drug testing. Our contact information is located on our website. Please call or email us with any of your questions or concerns. We are here to help.

TOXICOLOGY RESEARCH TIPS

Submitted by Jeff Teitelbaum, MLIS

Any reader of this column is very familiar with using the internet to search for information, whether it is a published research article, a thesis, a government report, a newsletter, a conference poster or paper, a PowerPoint presentation, or a book chapter. Sometimes it's useful to get back to the basics of searching techniques, and the topic of this 'how-to" concerns the use of **keywords.**

As an example, let's use a question that I recently received:

Can you find any papers that discuss the stability of THC (and/or Carboxy THC) in blood in glass vials during storage?

My first step is to make sure that I understand exactly what type of material I'm trying to find. When a forensic scientist asks for "any papers," I presume that she/he is probably looking for published, peer-reviewed journal articles. If I find other types of papers, such as dissertations, reports from federal government laboratories, or documentation published by manufacturers of analytical instruments, I would generally include those, as well. Unless I am asked to provide **any** material that I might come across, I will generally overlook newspaper articles, general/non-scientific magazines, blogs, etc., even though they may have information that appears to address the question at hand.

Now, where do I generally look for answers? Actually, I'm pretty much in the same boat as most crime labs in that I don't have the luxury of subscribing to any of the pricey citation and/or full-text databases. So I work primarily from publicly-accessible resources, and I'd like to briefly list the ones that I consult on a regular basis (note that each resource is hyperlinked):

- **Google:** The most popular search engine in the world, Google casts a wide net to include articles, reports, newsletters, PowerPoint presentations, dissertations, statistics, etc. It does have limitations, however. Results cannot be easily filtered (by year, author, etc.) or organized (by topic), and the user often receives an overload of information that can be tedious to weed through.

- **Google Scholar:** A sister site to the ubiquitous Google, Google Scholar provides a simple way to broadly search for scholarly literature: peer-reviewed papers, theses, books, abstracts and articles, from sources such as academic publishers, professional societies, universities and other scholarly organizations. Unfortunately, its sources are kept confidential so the scope of its coverage can be difficult to assess. There are "Advanced search" capabilities, however, and these can be very useful: searching by author, year, etc.

- **PubMed:** An invaluable resource, PubMed is the free public interface access to the National Library of Medicine's Medline database, which contains citations to more than 19 million journal articles relating to the health sciences. All of the core forensic sciences journals are indexed here. Results can be filtered, organized, emailed, downloaded, or saved in a personalized storage utility.

- **National Criminal Justice Reference Service:** The NCJRS Abstracts Database contains summaries of the more than 200,000 criminal justice, juvenile justice, and substance abuse resources housed in the NCJRS Library collection. This can be a good source for government reports. The database contains primarily abstracts, but most federally produced material is available at no cost as PDF files. For the abstracts, ordering information for full-text documents (at a cost) is generally provided.

- **Scirus:** Scirus is a free search engine provided by Elsevier Publishing. It is a very useful tool that searches and returns only science-specific results, and it discloses all of the substantial number of databases that it indexes. Only abstracts are provided, however.

So, nothing very exotic. The most important thing to remember is that each of these tools has unique strengths and weaknesses, and it's in your best interest to spend a bit of time playing with each resource so that you know how to search them, and so that you don't waste your time looking for material that they simply don't have. PubMed, for example, even with its 19 million citations, doesn't index any government reports, conference proceedings, or dissertations. If you're doing research on cocaine, it might be very helpful to locate various research reports from **NIDA Research Monographs** or the **DEA Microgram Bulletin**, for instance, but you won't find them on PubMed. You might find a reference to an occasional government document or meeting abstract, but it's rare and I would never rely on PubMed for this type of material. On the other hand, PubMed has a **far** more authoritative indexing of the core forensic science journals (such as the **Journal of Forensic Sciences**, **Forensic Science International**, **Journal of Analytical Toxicology**, etc.) than does Google or Google Scholar.

TOXICOLOGY RESEARCH TIPS (CONTINUED)

OK, back to our initial toxicology question. Let's go ahead and plug the entire question into Google. It's what we all do anyway(!), so let's see what our results are.

Type in: ***Stability of THC (and/or Carboxy THC) in blood in glass vials during storage . . .*** Our first result is the following article:

Intra- and Intersubject Whole Blood/Plasma Cannabinoid Ratios Determined by 2-Dimensional, Electron Impact GC-MS with Cryofocusing
Clinical Chemistry 55: 1188-1195, 2009

If we click on it and read the abstract, it does look it might contain some information germane to our question, but it's really more of an analytical procedure than a study on storage stability. Reading through the rest of the results on the page, there is nothing that seems very relevant. Most of the cites seem to deal with the determination of cannabinoids in plasma or urine.

Let's take another approach: **keywords**. Break down our research question into its primary subject components and we now get:

Stability *of* ***THC*** *(and/or Carboxy THC) in* ***blood*** *in* ***glass vials*** *during* ***storage***

String all of these terms together and enter them into Google:

Stability THC blood glass vials storage

Our first result is the following article:

Tetrahydrocannabinol stability in whole blood: plastic versus glass containers
J Anal Toxicol. 1986 Jul-Aug;10(4):129-31

Looks pretty good to me. The whole world is pretty much indexed now, and no matter how often you hear that databases and search engines ignore nonessential words (usually termed 'stop' words), I find that I usually get better results when I just enter keywords. Change the order of your keywords and you'll often get different results. Google and PubMed are completely different in the way that they index their material, so this gets back to playing around with them and experimenting with the kinds of results they return for different permutations of the same question.

If you'd like to continue searching for other articles on your chosen subject, an excellent feature of PubMed is their "Related Citations" feature. If you repeat the keyword search in PubMed, you'll end up with the same article:

Tetrahydrocannabinol stability in whole blood: plastic versus glass containers
J Anal Toxicol. 1986 Jul-Aug;10(4):129-31

Now look at the right side of the screen and you'll see the heading "Related Citations," under which is a list of citations. These are all articles that PubMed has 'chosen' based on the keywords of your primary article, and, more often than not, these suggestions are relevant in some way. Five 'related citations' are usually shown, but make sure you click on the "See all" button to view the rest.

Varying your search terms is a rather basic and fundamental technique, but hopefully you have seen how effectively it can aid you in your searching efforts. Obviously, I have just scratched the surface on databases and search engines and perhaps future columns could delve more into advanced techniques of Google Scholar, setting up a personal storage space on PubMed, etc. But the main thing I hope you take away from this column today is that different inputs yield different results, and that any thorough search will involve the use of multiple resources.

Library & Information Services
Forensic Laboratory Services Bureau
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SOFT/ACMT COURSES OFFERED

The Society of Forensic Toxicologists is once again partnering with the American College of Medical Toxicology to offer state of the art training in forensic toxicology. In the Fall of 2011, two courses will be held as part of this collaborative relationship.

A brand new 2 day course on Opioids will be held at the Radisson Plaza Warwick Hotel in Philadelphia, PA on November 8-9, 2010.

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The website for the opioid course brochure is: **(http://www.acmt.net/_Library/Meeting_Brochures/ACMT_Opioid_Forensic_Toxicology_ Seminar _ Brochure_V_7.pdf)**.

To complete the on-line registration for the opioid course, find **(http://acmt.net/cgi/page.cgi?event_id=48&_id=23&action=new).**

In addition, the Ethanol/Marijuana course that was held in Baltimore last November will be repeated at the Westin St. Francis Hotel in San Francisco, CA on December 13-14, 2010. This course will feature a new module on medical marijuana issues.

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The website for the ETOH/THC course brochure is: **(http://www.acmt.net/_Library/Meeting_Brochures/ACMT_E_M_Forensic_Seminar_SFO_V9.pdf).**

To complete the on-line registration for the ETOH/THC course, find **(http://www.acmt.net/cgi/page.cgi?event_id=52&_id=23&action=viewdetail).**

Both courses are targeted toward forensic, analytical, medical and clinical, toxicologists, and others with an interest in the medicolegal aspects of intoxication and impairment. Leaders in the field will cover issues pertaining to the biochemistry, toxicokinetics, clinical effects, and laboratory analysis and interpretation of these widely available intoxicants. Special emphasis given to a thorough understanding of the scientific basis for the assumptions, modeling, and calculations used in evaluating these cases. Small group and interactive presentations will be used to enhance the curriculum.

For more information about either course please call 623-533-6340 or email at **info@acmt.net** .

THE NEXT C.A.T. MEETING WILL BE HELD NOVEMBER 5 & 6 AT THE PARADISE PIER HOTEL AT DISNEYLAND.

FTCB ALCOHOL WORKSHOP AND FTCB FORENSIC ALCOHOL TOXICOLOGY EXAM

Submitted by W. Mark Fondren, DFTCB

The Forensic Toxicologist Certification Board is pleased to offer an eight hour workshop entitled "Forensic Ethanol Analysis and Interpretation" in conjunction with the 2010 Southern Association of Forensic Scientists Meeting in Tunica, Mississippi. The workshop will be held on Monday, September 19th, 2010. Topics will include: Chemistry of Alcohols, Pharmacology of Alcohols, Pharmacokinetics of Ethanol, Pharmacodynamics of Ethanol, Analysis of Biological Specimens, Analysis of Breath, and discussion of Analytical Methodologies. This workshop is designed to provide basic knowledge and/or supplement existing knowledge in the analysis of biological specimens for ethanol and related alcohols. The participant can expect to gain knowledge which will assist in the interpretation of analytical findings. Course materials will be provided to attendees. For further details, including workshop costs, please visit the FTCB or SAFS website.

The Forensic Toxicologist Certification Board will also offer the Forensic Alcohol Toxicology Exam at the Tunica meeting. Interested persons must submit an advance application to allow ample time for processing. Visit **www.ftcb.org** to obtain a copy of the application and requirements. This website also provides a list of suggested readings and examples of examination questions to assist you with test preparation.

As a final footnote to the reader, the workshop is a good primer for the persons interested in sitting for the exam, however, it alone will not adequately prepare one for the exam.

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

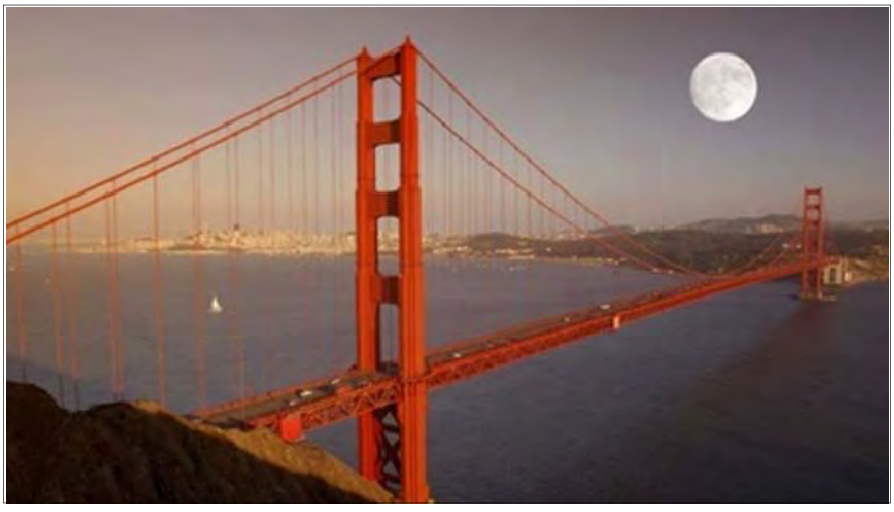
The 2011 Committee plans to develop a day-long student educational outreach program as part of the 2011 SOFT-TIAFT Meeting at the San Francisco Marriott Marquis Hotel.

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
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Laureen Marinetti, PhD

TREASURER
Daniel S. Isenschmid, PhD

LOCAL ARRANGEMENTS
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EXHIBITORS/SPONSORS
Peter R. Stout, PhD
Jeri D. Ropero-Miller, PhD

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

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
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- Robert Wennig, PhD - Luxembourg

Society of Forensic Toxicologists, Inc.

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ToxTalk **Deadlines** for Contributions:

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

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

2010: Richmond, VA……..Oct. 18-22, 2010…..…….Michelle Peace, Lisa Tarnai Moak

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

2014: ……..…yet to be determined…….……..…….……..

VISIT RICHMOND!

SOFT 2010
www.soft2010.org

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

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Treasurer:
Sue Brown

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Lyndsay Durham

Volunteer / Coor:
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Rebecca Doane
Tracey Dawson
Sarah Seashols Cruz
VCU Forensic Science Student Club

2010 S.O.F.T. COMMITTEE CHAIRS

Committee	Committee Chair
ByLaws	Yale Caplan, Ph.D., DABFT
Budget, Finance, and Audit	Robert Turk, Ph.D., DABFT
Membership	Dan Anderson, M.S., FTS-ABFT
ToxTalk Co-Editors	Yale Caplan, Ph.D., DABFT Vickie Watts, M.S.
Publications (JAT Special Issue)	Laureen Marinetti, Ph.D., DABFT
Awards	Philip Kemp, Ph.D., DABFT
Meeting Resource	Sarah Kerrigan, Ph.D.
Laboratory Guidelines	W. Lee Hearn, 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
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
MS/MS Guidelines	Dennis Crouch, M.S.
Strategic Planning	Marc LeBeau, Ph.D.
Consortium of Forensic Science Organ	Peter Stout, Ph.D., DABFT

14th ANNUAL

TOX 'N PURGE 5k
Karla Moore Memorial
Fun Run and Walk

WHEN:

2010 S.O.F.T. Meeting
Thursday,
October 21nd, 2010
6:30 AM – 8:00 AM

WHERE:

Greater Richmond Marriott
Richmond, Virginia

Registration Includes:

14th ANNUAL TOX 'N PURGE T-Shirt

Prizes for 1st place men's runner,
1st place women's runner and
1st place walker

S.O.F.T. TOX'N PURGE 5K
Karla Moore Memorial
Fun Run and Walk

Thursday, October 21, 2010 ✦ 6:30 AM – 8:00 AM

- Entry Fee: $10
- Make checks payable to: SOFT 2010
- Mail to: SOFT Office, 1 N. McDonald St, Suite 15, Mesa, AZ 85201

NAME

First Last

ADDRESS

SHIRT SIZE

CITY

STATE

ZIP

SEX M F

AGE ON RACE DAY

PHONE – –

5K RUN

WALK

E-MAIL ADDRESS

Liability waiver must be signed before mailing

I know that running a road race is a potentially hazardous activity and that I should not enter and run unless I am medically able and properly trained. I agree to abide by any decision of a race official relative to my ability to safely complete the run. I assume all risks associated with running in this event including, but not limited to: falls, contact with other participants, the effects of the weather, including high heat and /or humidity, altitude, traffic and the conditions of the road, all such risks being known and appreciated by me. Having read this waiver and knowing these facts and in consideration of your accepting my entry, I for myself and anyone entitled to act on my behalf, waive and release the organizers of the S.O.F.T. TOX 'N PURGE 4K FUN RUN/WALK and all other sponsors, their representatives and successors from all claims or liabilities of any kind arising out of my participation in this event or carelessness on the part of the persons in this waiver. Further, I grant permission to all of the foregoing to use any photographs, motion pictures, recordings, or any other record of this event for legitimate purposes.

Signature (parent or guardian if under 18) **X**_____ Date_____

Sunshine / Rieders Silent Auction
2010 Donation Pledge
Richmond, VA
October 18-22, 2010

Auction proceeds fund the SOFT Student Enrichment Program

Item(s) Donated: _____

_____

Retail Value: _____ (beginning bids to start at ½ retail value)

Donor Name(s): _____

Donor Company: _____

Email Contact Address: _____

Instructions: Make your commitment early by sending this "Donation Pledge" to the SOFT Office (**fax/phone- toll free 888-866-7638**). Then bring item(s) to the SOFT Meeting Registration Desk ***OR*** pre-mail/ship item(s) to:

Michelle Peace / Silent Auction
c/o UHaul Storage, Room 6013
900 N. Lombardy St.
Richmond, VA 23220

✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦

For Silent Auction questions or assistance, please contact:
Lisa Moak, 2010 Silent Auction Chair
Phone: 804-972-5448
Fax: 804-343-3854
Email: LTarnai@aol.com

✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦ ✦

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