



# TOXTALK

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## PRESIDENT'S MESSAGE

*Submitted by: Anthony Costantino, Ph.D., DABFT*

I will begin this final letter as SOFT President by stating that it really has been a great year. This year was exciting, full of challenges and serving this organization and our industry has brought me great happiness and satisfaction.

I have reflected upon 2009 through the eyes of the SOFT Presidency and want to take this opportunity to do three things: to appreciate the impact that we have as an organization, to recap highlights from this past year and to thank all of you who contributed.

As an active member and soon to be Past President of SOFT, I realize we have accomplished many of our goals and exceeded my lofty expectations. This was also the year we met SOFT's mission and purpose. We have always done an outstanding job of adhering to our mission and this year we were elevated in our ability to reach outside of our community.

This year was marked by significant events, decisions and outcomes: Some of them are as follows:

- SOFT responded to and is prepared to lead our profession in establishing requirements that may develop as a result of the NAS report.
- SOFT and ABFT became active members of the Consortium of Forensic Science Organizations

(CFSO), respectively Peter Stout and Yale Caplan represent our interests.

- SOFT, AAFS and ABFT formed the Forensic Toxicology Council (FTC). The FTC will monitor congressional and legislative activity on policies that impact forensic toxicology, to support the CFSO with respect to information and setting policy and to promote activities that support the discipline of forensic toxicology.

- Members of the FTC are:

**Anthony Costantino**  
*(thru 2009 as SOFT President)*

**Brad Helper**  
*(as SOFT President in 2010)*

**Sarah Kerrigan**  
*(as SOFT VP in 2010)*

**Peter Stout**  
*(SOFT Representative)*

**Marina Stajic**  
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## PRESIDENT'S MESSAGE (CONTINUED)

- The Scientific Working Group in Forensic Toxicology (SWGTOX) was established through the FTC . Three co-chairs, Dan Isenschmed, Bruce Goldberger and Rob Middleburg will lead its development.
- Another outstanding Special Issue of The Journal of Analytical Toxicology (JAT) was produced through the efforts of this year's Special Issue Editor, Jennifer Limoges. We look forward to another excellent issue next year as Laureen Martinetti has been named the Special Issue Editor for 2010.
- SOFT awarded the very first EDIT award to Tsadik Abraham for his submission entitled; "Urinary MDMA, MDA, HMMA, and HMA Excretion Following Controlled MDMA Administration to Humans". Marilyn Huestis accepted on his behalf.
- SOFT adopted the establishment of The Young Forensic Toxicologists Committee. Teresa Gray who presented the proposal to the SOFT Board, has the distinct honor of being the first chair to this promising committee.

The list above merely touches on some of the activities of this past year.

In this issue of Tox Talk, Barry Logan goes into more detail on the FTC and SWGTOX in an article titled, "Developments in Governance of Forensic Toxicology-Our Path Forward".

We had another exciting annual meeting in Oklahoma City. In fact, much of the above was discussed at this meeting and formal-

ized. I know that I speak for all of us when I recognize and thank Phil Kemp and Dennis McKinney for an outstanding meeting. Despite the economy and budget cutbacks, attendance was terrific. I can't thank you all enough for making the journey, and for your participation. John Soper and Jesse Kemp arranged a dynamic lineup of scientific workshops, and the Scientific Program, managed by David von Minden and Tom Kupiec was energetic and strong. Additional other highlights from this year's annual meeting follow:

- Denny Crouch presented the draft of the MS/MS Guidelines. This is an important and needed first step toward uniform acceptance of LCMSMS in forensic toxicology.
- On behalf of the Ethics Committee, Aaron Jacobs presented a draft of the Code of Ethics. We hope to have a final draft for consideration at the February board meeting.
- We agreed to explore "green" initiatives for future meetings.
- We agreed to support the Forensic Toxicology Council.
- Brad Helper produced a much needed and updated version of the Meeting Host Guidelines.
- We reviewed the recommendations received from our first cer-

tified financial audit and the recommendations were adopted by the Board.

- New officers and board members were elected for 2010. Congratulations to:

**President, Brad Hepler**  
**Vice President, Sarah Kerrigan**  
**Secretary, Dan Anderson**  
**Director, Jeri Roper-Miller**

While we were together in Oklahoma City, Vince Papa fondly remembered and eulogized the passing of long time SOFT member, **James Garriott**.

We are an impressive organization and have a great deal to be proud of. I look at all that has been accomplished and truly feel honored to have served you in such an important year.

I would like to thank you once more for a great year as President of SOFT. I would like to especially thank my fellow board members for their endless support. I wish our colleague, Brad Hepler much success and enjoyment as our new President in 2010.

I look forward to continued involvement as both an active member of SOFT and as a voice on the Board. A special thank you to all of you who helped me along the way. Your guidance and wisdom will always be remembered and appreciated.

Happy holidays!





# TREASURER'S REPORT

*Submitted by: Marc LeBeau, Ph.D. (marclebeau@verizon.net)*

This has been a year of many "firsts" for SOFT in terms of its banking accounts. For example, we have switched all primary banking records to the online version of QuickBooks. This allows for a higher level of security of our account information as it is backed up nightly to an offsite server. This move also improves efficiency due to automatic daily updates to all SOFT accounts.

Another first for 2009 has been an independent, certified audit. The audit was conducted in June at the SOFT office by Osborne, Parsons & Rosacker, LLP. At the request of the Audit, Budget, and Finance Committee, this audit was undertaken to ensure that the 2008 financial statements were free of material misstatement. The auditor examined documentation that supports the amounts that are listed in our financial statements and assessed the accounting principles used, the estimates made by the Board of Directors, and evaluated the overall financial statement presentation. I am happy to report that the auditor found that things were in good order. A copy of the relevant pages of the audit is included in this issue of ToxTalk. Should you desire to read the entire audit file, please contact me or the SOFT Office Administrative Assistant, Bonnie Fulmer, for a copy.

The auditor also provided some very useful recommendations to help us improve our future accounting practices. For example, it was recommended that the SOFT Treasurer have oversight of the an-

nual meeting and web banking accounts. Currently these accounts are overseen by the annual meeting's treasurer and the webmaster. They also recommended an increase in the liability insurance for officers and directors and that accounting records be maintained on an accrual basis to better compare activity from year to year. The Board of Directors has evaluated these recommendations and already taken the necessary steps to ensure that they are put into action.

The year has also seen an update to the SOFT office with a new desktop computer, all-in-one printer/scanner/fax machine, and software to allow for conversion of office files into .pdf format. Following the recommendations of the Strategic Planning Committee, we have also introduced nightly online backup of all data from the SOFT office computer to ensure that these data are always protected. Further, we have introduced the ability for two Board members to have remote access to the SOFT office computer should there be a need for distant support. All of this goes toward security of office documents, as well as protection from a catastrophe at the office, such as fire or water damage.

Finally, it is important to share the financial health of the organization with the membership. Table 1 shows the balances of the three primary SOFT banking accounts as of September 30, 2009. With a total of \$387,258 in these three accounts, the organization is financially sound. After three quarters, our expenses are nearly equal to our income (Table 2). However,

we did encounter a few unbudgeted expenses this year. For instance, as you have already heard, we are now a member organization of the Consortium of Forensic Science Organizations (CFSO). This membership has resulted in an unexpected \$10,000 expense that was not in our budget for the year. It should also be noted that a major source of income each year is from our annual meeting. As of this writing, the final bills from the Oklahoma City meeting are being paid so we should soon have final figures for the proceeds from that meeting. Congratulations and many thanks to the Oklahoma City team for a very successful meeting!

A final assessment of the 2009 year will be provided in the next ToxTalk, as well as a copy of the 2010 budget for your information. As always, if you have any questions about the finances of SOFT, please do not hesitate to contact me.

**Table 1: Balances as of 9/30/2009**

Account:	Amount:
<b>Operational</b>	\$100,204
<b>Reserve</b>	\$100,068
<b>ERA</b>	\$186,986
<b>TOTAL:</b>	<b>\$387,258</b>

**Table 2: Budget vs Actual  
(Jan 1 - Sept 30, 2009)**

	Budget:	Actual:
<b>Total Income:</b>	\$133,200	\$ 77,291
<b>Total Expenses:</b>	\$113,200	\$ 78,699
<b>Net Income:</b>	\$ 20,000	\$ - 1,408

## SOFT 2009 OKLAHOMA CITY – A MEMORABLE HEARTLAND EXPERIENCE

*Submitted by Phil Kemp, Ph.D., SOFT 2009 Co-Host*

Oklahoma City welcomed SOFT in style, October 19<sup>th</sup>-23<sup>rd</sup>, 2009. The week was filled with science and fun as almost 800 registered attendees descended on the Cox Convention Center in the middle of the city. The week began with a broad array of in-depth learning opportunities as over 1000 people sat in on 9 workshops. The scientific sessions from Wednesday to Friday were excellent and provided members, non-members and students a chance to see and hear some of the best forensic minds in the world present their latest cases, methods and research. The evenings were a chance to enjoy good food, listen to good music, and take in some of the sights and sounds of downtown Oklahoma City. Even the weather provided attendees a taste of life in Oklahoma. The weather was nice early, with some wind “sweeping down the plains”, followed by a cooler stretch with a little rain. All in all, it proved to be a well rounded heartland experience.

John Soper and Jesse Kemp did a great job of pulling in and planning the workshops for SOFT 2009. The program offered a wide variety of topics. Monday was filled with 5 workshops, 4 half-day and 1

full day. The full day was an ABFT Certification Prep class where the attendees learned about the certification process and methods of study for the exam. The workshop program for Monday also included offerings on Crawford Motions: The Right to Confrontation & How Recent Rulings May Affect Forensic Laboratory Management and Expert Testimony; Toxicology of Opiate Overdose: Strategies for Analysis and Interpretation; Scientific Best Practices and use of PowerPoint; and Envenomations: Toxins, Anti-venoms & Clinical Course. Tuesday’s workshop fare included 4 half-day sessions on The 10 Biggest Mistakes Made by Experts; Bridging the Gap in Postmortem Laboratory Practices and Case Interpretations; Newer Prescription Drugs: Impairment Potential & Identified Polypharmacies; and Autopsy Hair Collection—Just Pull It.

The Scientific Program Co-Chairs David von Minden and Tom Kupiec prepared a scientific program that included 135 abstracts divided into 45 platform and 90 poster presentations. They would like to express their gratitude for the help of many reviewers and moderators making this year’s scientific program a success.

The SOFT Student Education Program (SSEP) was highly successful thanks primarily to the efforts of Jeri Roper-Miller. There were approximately 50 attendees, with 6 of these being International. The tour of the Oklahoma State Bureau of Investigation (OSBI) was well received and the students were very interested in the additional presentation by the University of Central Oklahoma’s Forensic Institute staff on their soon to open facilities.

The SOFT 2009 Planning Committee would like to thank the many exhibitors for their very generous financial sponsorships that allowed us to have many wonderful events and showcase our great city. On both Monday and Tuesday, Frank Johnson, SO-SOFT Chair, hosted a great tour of OKC highlights. From the somber and thought provoking Oklahoma City National Memorial to the Chihuly glass collection at the Oklahoma Museum of Art, many unforgettable memories were made on these tours. Frank sends out a big “Hey” to his shopping ladies who did a great job of stimulating Oklahoma’s economy at Penn Square Mall.



***SOFT 2009 Planning Committee (pictured left to right) - John Soper, Frank Johnson, Linda Harty, Robert Bost, Debbie Denson, David von Minden, Jeri Roper-Miller, Phil Kemp (continued on next page)***

## SOFT 2009 OKLAHOMA CITY – (CONTINUED)

The social events for SOFT 2009 were an enormous task that required many hours of planning and footwork. A huge Oklahoma thank you goes to Dennis McKinney for his tireless leadership on these programs. The Monday evening Tier I Hospitality Receptions hosted by SOFT's major meeting sponsors were very well attended. From elegant string quartets to rowdy gunfights at the chuckwagon feast to light jazz music, there was a treat for all. The Tuesday evening Welcoming Reception allowed everyone to meet and greet our great sponsors at the opening of the Exhibit Hall before being transported to the featured special event of the week, the President's Banquet at the National Cowboy and Western Heritage Museum. As over 600 guests entered the museum, the large "End of the Trail" statue greeted them and our OKC meeting logo finally made



sense. Everyone enjoyed the many possible activities available: from touring the museum's many exhibit halls, purchasing souvenirs in the gift shop, dining on Oklahoma fa-

vorites such as buffalo, turkey or venison, to dancing the night away to music from our featured band, DanceFuse. Wednesday evening was packed with activities. The evening began with a "happy hour" in the exhibit hall with the vendors followed by dinner featuring "foods from around the world" highlighted by ten separate food stations. The Elmer Gordon Forum was very well attended with many thought provoking questions being generated by an enthusiastic audience. Many of the registrants then made their way to the Bricktown Entertainment District for the "Nite Owl Reception" hosted by Ceriliant at the Bricktown Brewery.

Thursday evening featured everyone flowing back into Bricktown to use their "Bricktown Bucks" at any of the local restaurants. After a delicious meal, everyone came back together for a chocolate feast at the Crystal Bridge. This event featured two chocolate fountains, a chocolate brownie bar and much more surrounded by the tropical gardens and waterfalls of this downtown landmark. Guests were able to choose between a string quartet from the University of Central Oklahoma set among orchids of the gardens or the rousing music of Horseshoe

Road. The outside water stage planned for the feature band was unable to be utilized due to the "wind sweeping down the plains" which allowed for a much more intimate setting for the music. The numerous standing ovations received by Horseshoe Road followed by the hour long autograph session indicated that this was a fitting climax for many of the attendees.

So many things go on behind the scenes at these meetings, from the organizing student volunteers (Bob Bost) to the Sunshine Riders Silent Auction (Laurie Tobler) to the Karla Moore Fun Run (Linda Harty and volunteers) who contribute so much. There is not enough room in this article to thank everyone by name but you know who you are. Thank you from SOFT 2009.

In addition, the SOFT 2009 committee would like to express our heartland and heartfelt gratitude to Vickie Watts, Bonnie Fulmer and Laurel Farrell for their invaluable work on the meeting. It was a gargantuan effort requiring hours of exhausting work. Thank you, ladies, for making SOFT 2009 OKC a success.

It was great having the SOFT group come to Oklahoma!



*(More) SOFT 2009 Planning Committee (pictured left to right) - Dennis McKinney, Laurel Farrell, Tom Kupiec, Peter Stout, Bonnie Fulmer, Frank Johnson, Laurie Tobler, Jesse Kemp*

THANK YOU MEETING EXHIBITORS / SPONSORS

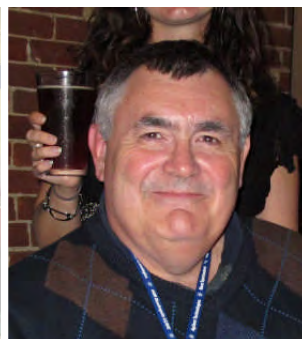
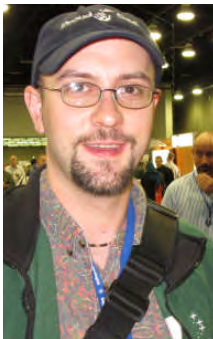
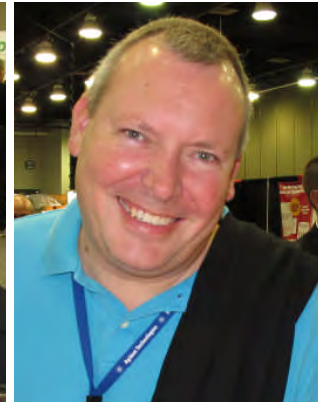
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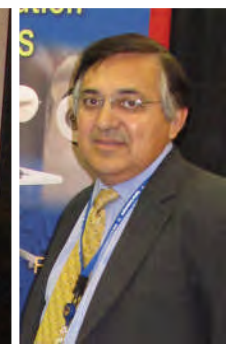
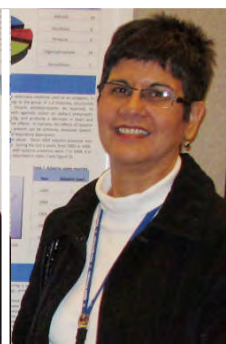
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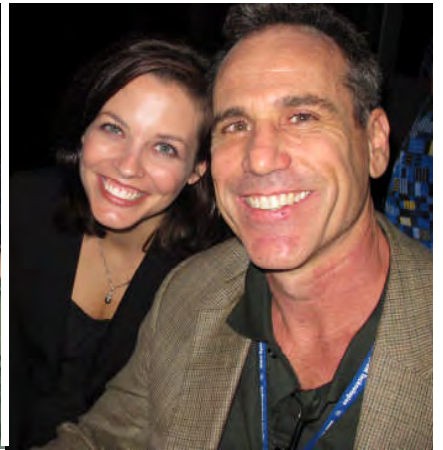
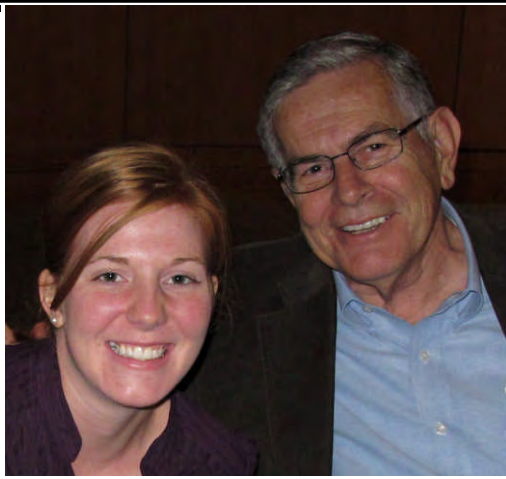






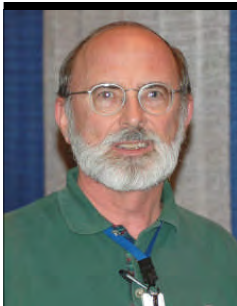












## CASE NOTES

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

Send interesting "Case Notes" to Section Editor, Matthew Barnhill, Ph.D. at mbarnhilljr@worldnet.att.net

### CASE NOTE #1: A FATALITY ATTRIBUTED SOLELY TO THE USE OF DIAZEPAM

*Submitted by: Timothy Hahn, B.S., Brian Macri, B.S., Michael Katz, M.S., Michael Lehrer, Ph.D. Department of Forensic Toxicology, Division of Medical-Legal and Forensic Investigations, Suffolk County, NY (timothy.hahn@suffolkcountyny.gov)*

The Suffolk County, NY Medical Examiner’s Office Toxicology Laboratory recently analyzed a case involving an overdose of diazepam and nordiazepam with no other contributory drug involvement.

The decedent is a 60 year old male with a history of high cholesterol and depression. He has a history of cocaine abuse ending approximately 20 years prior. Within the past year he has been abusing Valium leading to a 1 month stay in rehab 6 months ago. He has voiced ideations on ending his life. On the day of his death, the decedent sent an email to an out of state girlfriend expressing his intent to end his life. She immediately contacted the police who found personal and financial papers with instructions on a table in his empty house. The police “pinged” his cell phone and located the phone to a wooded area approximately 1 mile from his home. There the decedent was found lying on top of a tarp with a water bottle nearby. He was pronounced dead at the scene. No drugs were found on or near his body. The

time from when he was last known alive to the finding of his body was approximately 6 hours.

Findings at autopsy indicated the presence of hypertensive atherosclerotic cardiovascular disease with no definitive pathologic cause of death. Tissue samples collected were analyzed for a general unknown drug screen involving volatile, alkaline, weak acidic-neutral and immunoassay drug screens. No ethanol or other volatiles were detected in the femoral blood. The weak acidic and neutral drug screen of pulmonary arterial blood was also negative. The immunoassay screen of urine indicated the presence of a benzodiazepine. A subsequent specific benzodiazepine screen identified the presence of diazepam and nordiazepam in pulmonary arterial blood. The alkaline drug screen of liver tissue showed the presence of citalopram and trazadone along with the diazepam and nordiazepam. The citalopram and trazadone were at therapeutic to sub-therapeutic levels. A drug distri-

bution analysis for diazepam and nordiazepam utilizing LC/MS was performed with the results displayed in the table below.

The use of diazepam as an anxiolytic and sedative agent is considered relatively safe in absence of the concurrent use of alcohol or another CNS depressant. Steady state plasma levels of diazepam and nordiazepam in chronic users have been found to be in the range of 0.70 to 1.50 mg/L and 0.35 to 0.52 mg/L, respectively. (1) A calculated diazepam to nordiazepam ratio of 2.5 in these chronic users, indicates that the levels in this case are indicative of an acute usage pattern with a calculated diazepam to nordiazepam blood level ratio of 11. In a study of several diazepam overdoses, with blood levels almost ten fold the therapeutic range, no fatalities or long lasting adverse events were reported. (2) A literature search did not reveal other cases of a death attributed solely to the use of diazepam. A review of cases, as presented in Baselt’s Disposition of Toxic

	<b>DIAZEPAM</b>	<b>NORDIAZEPAM</b>
Femoral Blood	9.82 mg/L	0.88 mg/L
Pulmonary Arterial Blood	19.0 mg/L	1.73 mg/L
Brain	12.1 mg/kg	2.34 mg/kg
Liver	33.0 mg/kg	4.76 mg/kg
Gastric Contents	149.8 mg total	Not detected
Small Intestine Contents	40.4 mg total	Not detected

## CASE NOTE #1 (CONTINUED):

Drug's in Man, supports the infrequent finding of only diazepam and its metabolites in postmortem overdose fatalities. Most fatalities involving the use of diazepam involve one or multiple drug combinations, particularly alcohol and/or narcotics. Further analysis of the 2005 DAWN data of suicide and drug mis-usage deaths, indicates that benzodiazepine involvement in medical examiner

cases was always accompanied with the usage of another compound. (3) This case appears to be a unique death, where diazepam toxicity was the sole factor in deciding the cause of death.

### References

1. Baselt, Randall C. Disposition of Toxic Drugs and Chemicals In Man. 6<sup>th</sup> Ed. Foster City, CA.2002.

2. Jatlow P., Dobular K., Bailey D. "Serum diazepam concentration in overdose. Their significance. Am. J. Clin. Pathol. 72(4): 571-7, 1979.

3. <https://dawninfo.samhsa.gov/files/ME2005/DAWN2k5ME.htm>

## CASE NOTE #2: DEADLY INGESTION INVOLVING ZOLPIDEM, CLONAZEPAM AND ETHANOL: A CASE REPORT

*Submitted by: Steven Fleming<sup>1</sup>, C. Clinton Frazee III<sup>1</sup>, Uttam Garg<sup>1</sup>, Mary Dudley<sup>2</sup>, Laura Knight<sup>2</sup>, and Thomas Young<sup>3</sup>. <sup>1</sup>Department of Pathology and Laboratory Medicine, Children's Mercy Hospitals and Clinics, <sup>2</sup>Office of the Jackson County Medical Examiner, <sup>3</sup>Heartland Forensic Pathology, LLC, Kansas City, Missouri, U.S.A.*

### Introduction

Zolpidem is an imidazopyridine hypnotic commonly prescribed for short term treatment of insomnia. In the United States, it is sold under the trade name Ambien® and is available in 5 mg and 10 mg normal release capsules (1), which exhibit average peak plasma concentrations following an oral dose of 59 mcg/L (range, 29 – 113 mcg/L) and 121 mcg/L (range, 58 – 272 mcg/L), respectively (2). Ambien CR® is the extended release capsule that is available in 6.25 mg and 12.5 mg capsules (3). A single 12.5 mg extended release oral dose of zolpidem exhibits a peak plasma concentration of 134 mcg/L (range, 68.9 – 197 mcg/L) (3). Although zolpidem is not a benzodiazepine, it binds with the omega-1 (BZ<sub>1</sub>) receptor of the gamma-aminobutyric acid macromolecular complex (1) and thereby produces its sedative effects (4-5). It can produce adverse effects such as dizziness, somnolence, amnesia, nausea, fatigue and headaches (1-3,6). Zolpidem is

rapidly absorbed in the gastrointestinal tract, hepatically metabolized by cytochrome P450 enzymes into inactive metabolites (6-7), and primarily eliminated via renal excretion. Zolpidem has a relatively short half life of 1.4 - 4.5 hours (2).

Ethanol is widely abused and can be ingested with multiple drugs, resulting in profound adverse effects up to and including death. It is also known that ethanol can potentiate the CNS depressant activity, mainly respiratory depression, of benzodiazepines such as clonazepam (1). Clonazepam is a benzodiazepine used for its antiseizure and antipanic effects.

We report a fatal case illustrating the pertinent postmortem toxicology and autopsy findings involving a combination of ethanol and mixed drug intoxication.

### Case History and Autopsy Findings

A 34-year-old, 240-lb male was discovered dead sitting in a chair

in a hotel room. Two half gallon bottles of vodka, one empty and the other ¼ full, and numerous prescription bottles were found near the decedent who was known to have a three year history of alcohol abuse. The decedent reportedly had a history of depression and anxiety. Two weeks prior to his death, he allegedly had whiplash injuries caused by an automobile accident.

Autopsy findings consisted of pulmonary edema and congestion. The stomach was noted to contain a tan thin fluid along with white-tan chalky, pasty material with the absence of food material. The chalky, pasty material was consistent with dissolved pill residue from ingesting large quantities of oral medications. Other notable autopsy findings included moderate steatosis of the liver and a distended bladder. Steatosis, or fatty change, of the liver is associated with chronic alcoholism. The bladder was likely distended due to acute urinary retention during a comatose period while intoxicated.

## CASE NOTE #2 (CONTINUED):

Postmortem samples were sent for toxicological analysis and the results are presented in the postmortem toxicology section.

Based upon the autopsy findings, witness accounts, scene investigation and postmortem toxicology, the cause of death was determined to have resulted from a combination of ethanol and mixed drug intoxication.

### Postmortem Toxicology

Postmortem femoral and subclavian blood, vitreous humor, urine, liver tissue and brain tissue were submitted for toxicological analysis. The analysis included a blood enzyme immunoassay (EIA) screen for drugs of abuse, volatile screen by GC-FID and an alkaline liquid-liquid drug extraction followed by GC-MS. The toxicology results are summarized below.

### Discussion

The autopsy and toxicological data in this case indicate a fatality due to a combination of ethanol and multiple drug toxicity. Several fatalities involving zolpidem and other drugs can be found in the literature (4-5,8-13) as well as a single case that involved only zolpidem (14). There is also a reported case in which the authors attributed zolpidem toxicity as the sole cause for respiratory failure and coma in their patient who survived the incident (15). The highest reported zolpidem concentration, known by the authors, involved an elderly woman with drowning as the cause of death and a blood zolpidem concentration of 7.9 mg/L (2,14). In the present case, the femoral blood zolpidem concentration is 10 mg/L,

the subclavian zolpidem blood concentration is 3.9 mg/L and the liver tissue had a zolpidem concentration of 8.5 mcg/g. Due to the higher concentration of zolpidem in the femoral blood as compared to the subclavian blood, another femoral blood tube was analyzed. The zolpidem concentration of the second analysis agreed within five percent of 10 mg/L, which is the highest level currently reported. Chart 1 shows some selected data found in the literature regarding postmortem zolpidem concentrations from either: two different peripheral locations; or, a peripheral and heart blood as well as liver tissue concentrations. The ratio of either femoral blood zolpidem concentration to subclavian blood concentration, or peripheral blood concentration to heart blood concentration, is provided. The present case has a slightly higher ratio than all but one of the other cases noted in the chart.

Postmortem redistribution can give an appearance of increased concentrations of drugs in some cases. Some data does exist in the literature regarding postmortem redistribution of zolpidem (4-5,12-13). Due to the low volume of distribution, 0.5 – 0.7 L/kg of zolpidem (2), it is unclear how much redistribution occurs in postmortem samples. Therefore, more information is needed to adequately understand the distribution of zolpidem in postmortem samples.

As noted earlier, many fatalities involving zolpidem also include other drugs in combination. In the present case, the combination of clonazepam with the high level of ethanol is significant. However, the zolpidem level is also remarkable. Two fatalities can be found in the literature that contained zolpidem

### Postmortem Toxicological Analysis Results

<u>Peripheral Blood (EIA)</u>	<u>Result</u>	<u>Peripheral Blood GC-MS</u>
Amphetamine	Negative	Ibuprofen, Citalopram, Nordiazepam
Barbiturates	Negative	Zolpidem, Lamotrigine
Benzodiazepines	Positive	
Cannabinoids	Negative	<u>Peripheral Blood HPLC</u>
Cocaine metabolite	Negative	Alprazolam < 20 ng/mL
Methadone	Negative	Diazepam < 100 ng/mL
Opiates	Negative	Nordiazepam < 100 ng/mL
Phencyclidine	Negative	Oxazepam < 100 ng/mL
Propoxyphene	Negative	Clonazepam 109 ng/mL (subclavian)
		Lamotrigine 4.8 mcg/mL (subclavian)
<u>Peripheral Blood GC-NPD</u>		<u>Urine GC-MS</u>
Zolpidem 10 mg/L (femoral)		Zolpidem Present
Zolpidem 3.9 mg/L (subclavian)		
<u>Liver GC-NPD</u>		<u>Peripheral Blood Ibuprofen GC-MS</u>
Zolpidem 8.5 mg/kg		Ibuprofen 7 mcg/mL (femoral)
<u>Femoral Blood GC-FID</u>		<u>Vitreous Humor GC-FID</u>
Ethanol 319 mg/dL		Ethanol 337 mg/dL
Acetone < 5 mg/dL		Acetone < 5 mg/dL
Methanol < 5 mg/dL		Methanol < 5 mg/dL
Isopropanol < 5 mg/dL		Isopropanol < 5 mg/dL



## CASE NOTE #2 (CONTINUED):

and ethanol. Keller et al. reported a peripheral blood ethanol concentration of 219 mg/dL and zolpidem concentrations of 0.52 mg/L, 0.80 mg/L and 0.75 mg/L in femoral, subclavian and heart blood, respectively (11). Another case was reported by Khodasevitch and Volgram with blood zolpidem, liver tissue zolpidem and

blood ethanol concentrations of 0.9 mg/L, 42mg/kg and 250 mg/dL, respectively (4). It is known that concomitant ingestion of zolpidem and ethanol produces an additive sedative effect on psychomotor performance, as well as CNS and respiratory depression (1). Also, it is known that death can result from concomitant

ingestion of sedative/hypnotic drugs such as zolpidem and other central nervous system depressants such as carisoprodol (9), ethanol, acepromazine (8) or clonazepam. Our findings represent a novel case of fatal mixed drug intoxication involving zolpidem, clonazepam and ethanol toxicity.

### Chart 1 Distribution Of Zolpidem

Source	Heart Blood (mg/L)	Peripheral Blood (mg/L)	Ratio*	Femoral Blood (mg/L)	Subclavian Blood (mg/L)	Liver Tissue (mg/kg)
Keller (11)	0.75	-	0.65 (F:S)	0.52	0.8	-
Gock (12)	7.7	-	0.58 (S:H)	-	4.5	22.6
Meeker (5)	2.91	1.4	0.48 (P:H)	-	-	4.74
Levine (4)	2.2	2.5	1.13 (P:H)	-	-	2.8
Levine (4)	0.18	4.4	24.4 (P:H)	-	-	0.27
Levine (4)	0.58	0.71	1.22 (P:H)	-	-	0.56
Levine (4)	3.2	3.6	1.12 (P:H)	-	-	3.4
Present Case			2.56 (F:S)	10	3.9	8.5

\* P=Peripheral Blood, S= Subclavian Blood H=Heart Blood and F=Femoral Blood

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## DRUGS IN THE NEWS

Send interesting "Drugs In The News" to Section Editor, Dwain Fuller, B.S., DFTCB, at Dwain.Fuller@va.gov

### PROPOFOL... TO SLEEP: PERCHANCE TO DREAM...

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

Those acquainted with Hamlet will know the rest goes, "...ay, there's the rub; For in that sleep of death what dreams may come?" That sleep of death... the King James Version of the Bible at times uses the word, "sleep" to mean death. So where am I going with this? This is "Drugs in the News" and what drug is in the news more than about any other these days? Yes, I am drinking the Kool Aid and joining the Michael Jackson hype. (For the young folks: "Kool Aid" is in reference to Jonestown, Guyana, another clever toxicological reference...look it up!) While at the time of this writing the toxicology results have not been released to the public, the not-so-secret-secret is that propofol will play a central role in Mr. Jackson's death.

It is not my intention to impugn the reputation of a useful and effective drug like propofol. We all know that "dose makes the poison", and propofol is just another one of those things that can be lethal if used incorrectly. So, what is this drug that the media is so hyped about?

#### History

While generic versions are available, propofol is marketed by AstraZeneca under the name Diprivan®. Diprivan® is not new; it was originally developed by Imperial Chemical Industries, now AstraZeneca, as ICI 35868 with clinical trials beginning in 1977. After a reformulation of the solubilizing agent, due to ana-



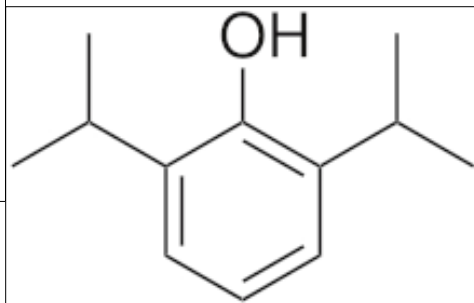
phylactic reactions, it was re-introduced in 1986 as Diprivan®. Diprivan derives from a pseudo-acronym of the name **DI**iso**PR**opyl **I**ntra**V**enous **AN**esthetic.

The goal of an anesthetic is to produce unconsciousness, immobility and amnesia. Some would argue that only amnesia and immobility are necessary since interoperative awareness is immaterial if it cannot be remembered; an interesting point. Be that as it may, propofol is quite efficient at producing amnesia in concentrations well below those required for immobility. As a result of this reputation and the fact that the propofol suspension is milk-like in appearance, it has been dubbed by many anesthesiologists as "milk of amnesia". Unfortunately, this property would make propofol a prime candidate as a "date-rape" drug should it become more available to the public.

#### Analysis

Chemically propofol is the relatively simple molecule, 2,6-diisopropylphenol with a molecular weight of 178.27 amu and a pKa of 11.0. Propofol is readily extracted

and detected in most acid/neutral extraction schemes. Due to its low molecular weight propofol elutes relatively early, however, and because of its sparse mass spectrum,



consisting primarily of ions 163, 178, and 117, in order of descending abundance, propofol could be dismissed as a contaminant or artifactual peak, if an analyst were not expecting its presence. Due to its acidic proton, propofol can be easily derivatized by a wide variety of derivatizing reagents to yield higher ions, more amenable for mass spectrometry.

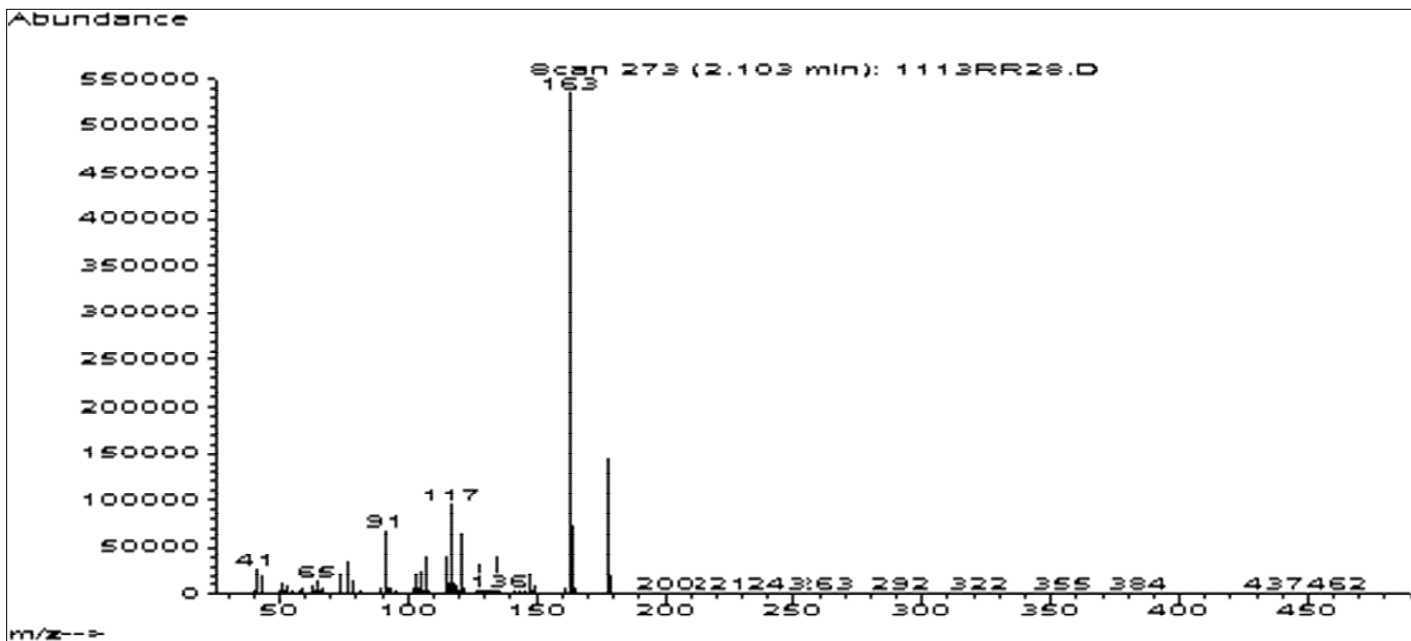
#### Pharmacodynamics/ Pharmacokinetics

Propofol acts almost exclusively at the GABA receptor and has a volume of distribution of 2 – 12 L/Kg and a terminal half-life of 1.5 – 2.5 hours. Due to its high lipophilicity, propofol is rapidly partitioned to the tissues from the vascular space after the cessation of administration with an early distribution half-life of 7 -8 minutes.

#### Interpretative Issues

The interpretation of postmortem blood propofol levels can be problematic. The literature reports that

## DRUGS IN THE NEWS (CONTINUED)



it requires a blood propofol concentration of 6 – 10 mg/L for anesthetic induction and concentrations of 2 – 4 mg/L for anesthetic maintenance, and that 50% of patients were awake and oriented after surgery at levels from 0.95 – 1.07 mg/L. However, Drummer reported in 1992 the case of a 29 year old female who committed suicide by intravenous injection of 400 mg of propofol. The decedent's postmortem propofol concentration was 0.22 mg/L in femoral blood. In 5 other cases, postmortem propofol concentrations ranged from 0.5 – 5.3 mg/L. This obvious overlap in lethal and subtherapeutic concentrations is undoubtedly due to its extreme lipophilicity and thus post-mortem redistribution, especially in acute overdose situations. This is not unlike the conundrum faced by lethal injection opponents who seek to use low postmortem thiopental levels as evidence that the condemned was conscious at the time of the administration of the paralyzing agent and potassium chloride. (See ToxTalk, Vol. 30, No. 2)

### Stability

Further complicating the interpretation of propofol levels, is the fact that it has been shown that losses of propofol up to 36% are possible in whole blood stored at 4°C for 24 days. Agnieszka, et al. demonstrated a more rapid loss of propofol from whole blood stored at -20°C, dropping below the LOQ of 0.1 mg/L in as short as 20 days, as compared to whole blood stored at 4°C; these losses were not observed in plasma, however. It has also been demonstrated that intravenous solutions of propofol stored in plastic infusion bags have exhibited losses of 80% in 4 hours and 95% in 24 hours.

The above brings into question the role that plastic collection tubes, which are now seeing widespread hospital use, may play in the in-vitro stability of propofol, or thiopental for that matter.

Hmmm --- I feel a research project coming on.

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*Send Interesting "Drugs in the News" to Section Editor, Dwain Fuller (dwain.fuller@va.gov)*

## SCIENCE, LAW, AND POLICY

### DEVELOPMENTS IN GOVERNANCE OF FORENSIC TOXICOLOGY – OUR PATH FORWARD

*Submitted by: Barry Logan, Ph.D., DABFT (barry.logan@nmslabs.com)*

In February 2009, the National Academies of Science (NAS) released a long awaited report titled “Strengthening Forensic Science in the United States – A Path Forward”. This report was critical of some disciplines in forensic science – especially the pattern sciences (bite marks, toolmarks, fingerprints and handwriting) – questioning their scientific underpinnings, and the thoroughness with which they had been validated. The full report is available from the NAS at its website. Forensic toxicology escaped specific criticism, and in fact was recognized by the NAS as a discipline soundly based on published peer reviewed literature, and one that had taken steps through its professional organizations to promote education, accreditation and certification. Nonetheless, forensic toxicology will be vulnerable to the general backlash impending on the forensic sciences.

Although these Government reports and studies often get filed and forgotten, not so with this one. In Spring and Summer 2009, the US Senate began holding meetings, then hearings on the findings of the NAS report and it became clear that there was a drive to produce legislation promoting reform in the forensic sciences, most notably in the areas of certification and accreditation, education and research, and ethics. At the same time, a group out of the White House, the Office of Science and Technology Policy (OSTP) also formed committees to promote legislation and reform. This process was described during the SOFT meeting in Oklahoma City, and can now be viewed on the RTI website: <https://www.forensiced.org/>

How were the Forensic Sciences to respond? A group called the Consortium of Forensic Science Organizations (CFSO - <http://www.thecfso.org/>) had been established in the late 1990’s largely to promote congressional support for the funding of the Coverdell grant process. In an era when DNA was in the spotlight and was attracting a lot of federal funding, CFSO’s mission was to raise awareness to the needs of all the forensic sciences for research and infrastructure improvements,

and it had some success in this respect. Toxicology was late to become involved with CFSO, with SOFT and ABFT joining in 2009, and splitting the \$15,000 membership fee. Peter Stout was appointed to represent SOFT and Yale Caplan to represent ABFT.

As the Senate committee and White House group began to hold hearings and meetings with various stakeholder interest groups in the summer of 2009, it became clear that legislation affecting the practice of all forensic disciplines, including toxicology was likely, possibly as soon as spring of 2010.

In order to ensure that our collective interests in forensic toxicology were heard in this process, in summer 2009, the leadership of SOFT, AAFS, and ABFT proposed the formation of a professional trade group, now called the Forensic Toxicology Council or FTC. The purpose of the FTC is to monitor congressional and legislative activity on policies that would impact forensic toxicology, to ensure that our CFSO representatives have support for providing congress with reliable information on which to base policy, and to promote activities that support and benefit all the organizations and the discipline of forensic toxicology as a whole.

The FTC has nine members, the president, vice president and CFSO representative of SOFT, the president, vice president and CFSO representative of ABFT, and the section chair, section secretary and ranking Board of Directors member of the Toxicology Section of AAFS. These individuals are respectively: Brad Hepler, Sarah Kerrigan, Peter Stout; Marina Stajic, Bruce Goldberger, Yale Caplan; Jeri Roper-Miller, Ken Ferslew, and Barry Logan (Chair). The FTC has been recognized by the Boards of SOFT and ABFT and will be established as a standing committee of the AAFS Toxicology section, pending approval by the membership at the section business meeting in Seattle in February.

The first activity of the FTC has been to collect and generate documents to

be forwarded to congress supporting the sound scientific foundations of forensic toxicology and underscoring the professional activities of these organizations in support of professional and scientific excellence.

The next project has been to establish, as other disciplines already have, a Scientific Working group in Forensic Toxicology (SWGTOX). Such scientific working groups have been recognized by legislators and staff as the go-to groups for developing policies for governance and professionalism in each discipline, so it was critical that forensic toxicology had an equivalent resource. At the 2009 SOFT meeting in Oklahoma City, SWGTOX was constituted and three co-chairs appointed: Rob Middleberg, Dan Isenschmid, and Bruce Goldberger. They have each identified 5-10 members to begin work on developing the standards previously established by the SOFT/AAFS Laboratory Guidelines Committee and Mass Spectrometry Guidelines Committee, and to develop activities and documents to support all the recommendations of the NAS committee in the following areas: Standards and Practice; Education and Training; Certification and Accreditation; and Validation and Ethics. The FTC is working on obtaining financial support from the National Institute of Justice (NIJ) to support the activities of SWGTOX.

These developments will likely have a major long term effect on our profession, resulting in increased regulation and accountability, as well as opportunities for funding, research and other support to strengthen the quality and credibility of all forensic sciences. With the coordinated efforts of our organizations’ leaders and membership, forensic toxicology is well positioned to take advantage of these new opportunities and to help shape regulations that will impact us for years to come. Please contact any of the individuals identified above if you have questions or would like to provide input on these various activities. Watch future issues of ToxTalk for updates from SWGTOX and the FTC.

## SCIENCE, LAW, AND POLICY

### CONSORTIUM OF FORENSIC SCIENCE ORGANIZATIONS (CFSO) UPDATE

*Submitted by: Peter Stout, Ph.D., DABFT (pstout@rti.org)*

Since last report, activities of the Consortium of Forensic Science Organizations (CFSO) have continued at a fast pace. Barry Logan covers the efforts of the newly formed Forensic Toxicology Council, efforts to establish a Scientific Working Group in Forensic Toxicology (SWGTOX), and work with NIJ to fund this effort. These are efforts that have grown out of our involvement in the larger forensic community through the CFSO.

Over the week of September 8<sup>th</sup> there were numerous meetings that both Yale Caplan (ABFT CFSO representative) and myself attended with CFSO. On September 8<sup>th</sup> there was a meeting between CFSO and a large number of other stakeholders with the Subcommittee on Forensic Sciences in the Office of Science and Technology Policy (OSTP) in the White House. All three of the Subcommittee chairs were present to help explain the efforts of the Subcommittee. Also as Barry's article indicates, from this meeting we were able to arrange for representatives from this Subcommittee to address the SOFT meeting in Oklahoma, the transcript of which is available in on demand format at [www.forensiced.org](http://www.forensiced.org). This runs about 2 1/2 hours and include the 21 questions from the audience present in Oklahoma and on the live webcast of the event.

On September 9<sup>th</sup> the Senate Judiciary Committee held a hearing on

forensic science. Testifying at this hearing were Dr. Eric Buel Laboratory Director Vermont Forensic Laboratory, Peter Neufeld, Co-Director, The Innocence Project, Harold Hurtt, Chief of Police, Houston Police Department, Paul Giannelli, Professor, Case Western Reserve University, Barry Matson, Deputy Director, Alabama District Attorneys Association and Matthew Redle, County and Prosecuting Attorney Sheridan County, WY. A full recording of this Senate Hearing is available at <http://judiciary.senate.gov/hearings/hearing.cfm?id=4038>. It is about 1½ hours and is worth the time to watch it.

Also on September 9<sup>th</sup> CFSO met with Senate Judiciary Committee staff from Senator Leahy's (D-VT) and Senator Sessions (R-AL) offices. This meeting was part of a continuing series of meetings discussing key topics affecting forensic sciences. This one addressed certification specifically. This meeting was attended by a larger number of stakeholders in addition to CFSO and it was generally agreed that certification of individuals is a necessity particularly for those who may have cause to testify about results. The CFSO group also met with Deputy Attorney General David Ogden to discuss further the issues facing the forensic sciences.

In November meetings continued between CFSO and other stake

holder groups with Senator Leahy's staff to discuss issues of research needs in forensic sciences and at least one more meeting is planned to conclude research needs and then address issues of training and education.

There still appears to be a significant likelihood of legislation being introduced in the spring to address the forensic sciences and to respond to the National Academies of Science (NAS) Report. The vehicle for this legislation is still viewed to be the reauthorization of the Justice For All Act of 2004 (PUBLIC LAW 108-405—OCT. 30, 2004). Other legislation has already been proposed with impacts for forensic sciences specifically Senators Franken, Grassley, Feinstein and Hatch introduced a bill on November 5<sup>th</sup> to address the backlog of rape kits and their analysis (S.2736). While this does not impact toxicology, it is a harbinger of the attention on forensic issues and likely legislative proposals soon to come.

As with the update in the last ToxTalk issue, I encourage you to send me your comments and concerns about what you see as needs to be represented. Your efforts to make yourself informed about the issues at hand are essential. The big issues are here, an opportunity to influence our science for years to come is here. Please, be informed and be active.

## 2009 JAT SPECIAL ISSUE THANK YOUS

*Submitted by: Jennifer Limoges*

It has been an honor to serve as the Guest Editor of the 29th annual SOFT Special Issue of the Journal of Analytical Toxicology. I would like to thank Tony Costantino for providing this rewarding and challenging opportunity. Thanks also to Julie Weber-Roark (JAT Managing Editor) and Bruce Goldberger (JAT Editor) for

their guidance and advice throughout the process.

Thank you to all the authors for their excellent submissions and adherence to all deadlines. And thanks to all of the friends and colleagues who volunteered their time to review the manuscripts. Thanks to everyone involved for sharing their expertise!





## TOXICOLOGY - BITS & PIECES

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

### AAFS/SOFT JOINT DRUGS & DRIVING COMMITTEE

Submitted by:  
*Jennifer Limoges, M.S.*

The SOFT/AAFS Drugs & Driving Committee is continuing to develop its content for the SOFT website. We are also working on some future workshops ideas on oral fluid applications in impaired driving investigations, as well as some basic drug class reviews. Thanks again to **Amy Cochems** and all the presenters for an excellent Special Session in Oklahoma City.

### AAFS NEWS, TOXICOLOGY SECTION

Submitted by: *Jeri Ropero-Miller, Ph.D.*

It is timely to publicize the steps that are being taken to promote the interests and understanding of the field of forensic toxicology following the release of the National Academies of Science Report on *Strengthening Forensic Science in the United States*. Congressional hearings and White House consultations are occurring in Washington, DC, which will shape the future of all branches of forensic science, including toxicology, around the issues of research, accreditation, certification, and funding among others. Currently, our specific interests are represented in these meetings by SOFT and ABFT representatives to the Consortium of Forensic Science Organizations (see [www.thecfso.org](http://www.thecfso.org)).

While general concerns of AAFS are relayed through the Academy President to Congress and the CFSO, we have concluded that to better coordinate representing the needs and issues affecting the forensic toxicology community, improved communication between the main organizations of forensic toxicology representation (SOFT, ABFT, AAFS, and now CFSO) will be critical. To this end, we have informally established a Forensic Toxicology Council (FTC) to promote rapid exchange of information between these forensic toxicology organizations. The ABFT and SOFT Boards recently ap-

### AAFS NEWS (CONT.)

proved participation in this Council at the SOFT annual meeting in Oklahoma.

The proposed Council members are the current presidents of SOFT (**Anthony Costantino** in 2009 / **Brad Hepler** in 2010) and ABFT (**Marina Stajic**), the AAFS Toxicology Section Chair (**Jeri Ropero-Miller**), ranking AAFS Board Member (**Barry Logan**), and designated representatives of SOFT (**Peter Stout**) and ABFT (**Yale Caplan**). In addition the Vice Presidents of SOFT (**Sarah Kerrigan** in 2010) and ABFT (**Bruce Goldberger**) and the AAFS Toxicology Section Secretary (**Ken Ferslew**) have now been added to the FTC. In line with other forensic disciplines, the first activity of the Council will be to help establish a Scientific Working Group (SWGTOX), a successor to the Laboratory Guidelines Committee, to provide technical advice to Congress on any proposed policies that affect our discipline.

More information pertaining to the FTC will be forthcoming as we near the 2010 meeting. Thanks to **Barry Logan** and **Peter Stout** for their contributions to this article as both have been very active in these efforts.

If you are not a member of AAFS Toxicology Section we welcome you to join. If you are a member and need to update your membership to Fellow, see a Section Officer.

### NATIONAL SAFETY COUNCIL — COMMITTEE ON ALCOHOL AND OTHER DRUGS

Submitted by: *Laura Liddicoat, B.S.*

The Executive Board of the NSC/CAOD met Friday, October 23rd at the Renaissance Oklahoma City Convention Center Hotel at the end of this years' SOFT Conference. Current officers are:

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

Three individuals were added to the committee's membership:

**Arnold Angelica**, FAA,  
**Cynthia Burback**, CO DOH,  
**Michael Moore**, WY DOH, and  
**Robert Sears**, SC Law Enforcement Div.

### NSC-CAOD (CONT.)

The Executive Board announced that **Dr. Dennis Canfield** will be the next recipient of the Robert F. Borkenstein Award. This distinguished honor will be presented at a banquet and ceremony to be held Monday evening, February 22nd during the AAFS Annual Meeting in Seattle.

The individual receiving the Borkenstein award is one who has a minimum tenure of 25 years of active service in the area of alcohol/drugs and traffic safety, has contributed to that field to a degree that their achievements are nationally recognized and has a minimum of 10 years of active and productive involvement as a volunteer with the National Safety Council. SOFT members may not be aware of Dr. Canfield's many contributions to traffic safety.

Dennis Canfield, Ph.D., is the Manager of the FAA's Toxicology and Accident Research Laboratory at the Bioaeronautical Sciences Research Laboratory, and Civil Aerospace Medical Institute in Oklahoma City. The laboratory is responsible for the analysis of all fatal aviation accidents occurring nationwide. Its mandate is to detect the presence of all drugs in victims of aircraft mishaps, whether general or commercial. "If it flies in the air - even a balloon - and an accident occurs and somebody dies, we'll receive specimens for testing." Dennis opened the FAA's forensic laboratory in October of 1990. By the time it opened, he had already spent a year setting it up and buying the equipment. Previous to the FAA, he spent five years with the New Jersey State Police crime lab and 10 years as Director of Forensic Science for the University of Southern Mississippi. He has authored and co-authored numerous scientific articles on various topics related to alcohol and drugs and traffic safety.

The next meeting of the NSC Executive Board will be Sunday, February 21, (1-4pm) and the Full Committee will meet on Monday, February 22 (9am-1pm) at the AAFS in Seattle, WA. To access the CAOD policies, previous Borkenstein Award recipients or learn more about the committee, go to [www.nsc.org](http://www.nsc.org) and type in Committee on Alcohol and Other Drugs under the search engine.

## AMERICAN BOARD OF FORENSIC TOXICOLOGY (ABFT) NEWS ([www.abft.org](http://www.abft.org))

*Submitted by: Marina Stajić, Ph.D., D-ABFT, President*

ABFT presented an all day workshop at the meeting of the Society of Forensic Toxicologists in Oklahoma City, conceived and co-chaired by **Laura Labay, PhD, DABFT** and **Barry Logan, PhD, DABFT**. The well attended workshop (approximately 140 registrants) was designed to demystify the certification process - often perceived as an intimidating and daunting task - by reviewing the various areas covered in the ABFT examination, reviewing the qualifications needed to apply for certification, discussing study techniques, and reviewing resource materials

necessary for a successful application. All who attended the workshop will receive a \$50 discount toward their applications for certification.

The annual ABFT Certificant ceremony and reception was held during the Society of Forensic Toxicologists meeting in Oklahoma City, OK. Following a brief tribute by Dr. **Vincent Papa**, glasses were raised the memory of Dr. **James Garriott, DABFT**, who unexpectedly passed away on September 1, 2009. Jim was a true inspiration to his colleagues and a dear friend to many of us. Dr. **Kurt Dubowski**,

the first Board President and Dr. **Yale Caplan**, the longest serving Board President, were enthusiastically recognized by those in attendance.

CONGRATULATIONS to **Byron Curtis, Ph.D.**, for having successfully met all the requirements for the ABFT Diplomate certification.

CONGRATULATIONS to the staff of the **Forensic Toxicology Laboratory, Franklin County Coroner's Office**, Columbus, OH on successfully meeting all the ABFT requirements for laboratory accreditation.

### ABFT REMINDERS:

- Effective January 1, 2010, all ABFT accredited laboratories will be required to subscribe to both the FTC (Toxicology) and the T-series proficiency tests of the College of American Pathologists (CAP). Laboratories will be 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 will need to be completed for the T-series, plus 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 will be 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 will 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](http://www.ABFT.org) for more information.

## YOUNG FORENSIC TOXICOLOGIST COMMITTEE

At the 2009 SOFT annual meeting in Oklahoma City, the Board of Directors approved the formation of a new “Young Forensic Toxicologist Committee”. The aim is to encourage greater participation by younger attendees within the SOFT organization. This group will manage the SOFT Student Enrichment Program at the annual meetings, facilitate

networking opportunities, and promote training and education for young toxicologists. Additional details will be available in future ToxTalk issues and email broadcasts. Anyone interested in the Young Forensic Toxicologist Committee should contact the Committee Chair, Teresa Gray (grayte@mail.nih.gov or softyft@gmail.com).



Teresa Gray

### CONGRATS. TO E.D.I.T. AWARDEE

The SOFT organization created a new prestigious award in 2009, named the “Experimental Design and Impact on Toxicology (EDIT) Award”. The author of the paper published in the SOFT Special Issue of JAT that is judged to show the best scientific experimental design and whose work has a wide impact in the forensic toxicology field.



Congratulations to the first recipient of this new award in 2009, **Tsadik Abraham**, for his submitted abstract titled “Urinary MDMA, MDA, HMMA, and HMA Excretion Following Controlled MDMA Administration to Humans”.

Special thanks to the appointed judges for this award, Edward Cone, Amanda Jenkins, and Hans Maurer.

### THANK YOU TINSLEY

Sincere thanks are extended to Tinsley Preston, of Preston Publications for his generous contributions of the many pictures displayed in this issue of ToxTalk that were taken during the recent SOFT annual meeting in Oklahoma City. Tinsley spends a significant amount of time attending many meeting functions in order to capture the many wonderful images that make ToxTalk readers smile!



## 13TH ANNUAL 5K FUN RUN

The annual Fun Run at the SOFT meetings has now been formally named the “Karla Moore 5k Fun Run” in honor of it’s late founder. Over the years, it has become a standard, expected early morning event, gathering both the hard core fitness athletes, as well as those who may just want to participate for the fun of doing it! Participants each get a souvenir tee shirt and compete for

three very nice prizes contributed by long time sponsor, **Agilent Technologies**. Additional long time sponsors of this event are: **Cerilliant**, **Shamrock Glass**, and **Quality Assurance Services**.

Sincere appreciation is sent to the 2009 Fun Run Chair, **Linda Harty** and the many other volunteers who assisted the participants on the designated path at Myriad Gardens.

Congratulations to the top three winners in their classifications:

Fastest Mens Runner:  
**Mark Roberts (18.03)**

Fastest Women Runner:  
**Becky Wittrig (23.33)**

Fastest Walker:  
**Marco Trauzzi (25.05)**





## SEEKING WORKSHOP IDEAS FOR SOFT 2010

*Submitted by: Carl E. Wolf, Ph.D.*

Greetings and welcome to fellow SOFT members and fellow toxicologists and future toxicologists:

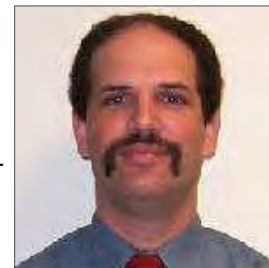
The SOFT 2010 planning committee in Richmond, Virginia is extremely excited in being able to host the 2010 meeting. We have been working hard for the past few years in order to provide you with an informative and enjoyable meeting.

We are currently requesting submission of ideas for workshops that you would like to present at the meeting. So that we can meet deadlines for ToxTalk and not interfere with other meetings that you may be attending, I have slightly altered the timelines for submissions of ideas and proposals.

I would appreciate hearing what ideas people have for workshops. So in that spirit, by Jan 11, 2010, I am requesting that if you have an idea for a workshop, but don't have all of your ducks in a row or speakers lined up, that you send me an electronic copy of a workshop proposal as a heads up. By Feb 1, 2010, I need to have your complete electronic copy, with all of your details. Also, please mail me a hard copy of that proposal by March 1, 2010. The last but not least important date is Sept 13, 2010, this is the date that I must have an electronic copy of all materials that are to be included in the workshop (slides, handouts, etc.). Don't worry, I will be sending out reminders as deadlines approach.

Electronic copies of the blank workshop proposal are available on the SOFT website (SOFT-TOX.ORG), under the "Meeting Information" link on the left side of the page, and then select "Meeting Forms".

Once again we are eager to welcome you to Richmond. Please feel free to contact me by telephone at 804-828-4420 or email (cewolf@vcu.edu) if there is any additional information needed or as questions may arise regarding SOFT 2010. Thank you for your consideration.



Carl Wolf, Ph.D.

## SOFT AND ACMT HOLD JOINT COURSE ON ETHANOL AND MARIJUANA IN BALTIMORE

*Submitted by: Michael Smith, Ph.D., DABFT and Marilyn Huestis, Ph.D.*

On November 18-19, 2009 the American College of Medical Toxicology (ACMT) held its first forensic course on ethanol and marijuana in Baltimore, MD, in association with the Society of Forensic Toxicologists (SOFT). The two-day meeting attracted 122 registrants, about 75% medical toxicologists and 25% forensic toxicologists. The physicians, board certified in medical toxicology or new fellows or trainees, specialize in the care of poisoned patients, but many also collaborate with medical examiner systems and frequently testify in court. The course reviewed the pharmacodynamics and pharmacokinetics of ethanol and marijuana drugs, forensic requirements when test results become evidence in legal proceedings, and case

studies. The cases permitted forensic and medical toxicologists to share experiences addressing drug-related accidents and litigation. Many of the legal issues were common to both groups but attendees learned unique aspects of treating patients when those efforts may become evidence in a legal proceeding. There were good opportunities in the breakout sessions, wine and cheese reception and lunches to interact with the faculty and attendees. A positive aspect of the course was the opportunity to view the material through the eyes of both medical and forensic toxicologists. Ethanol presentations were given by Barry Levine, PhD, Barry Logan, PhD, and Bob Forney, Jr., PhD from SOFT, Gary Kay, PhD from Georgetown University and

Chuck McKay, MD from ACMT. The second day included lectures on marijuana by Marilyn Huestis, PhD, Erin Karschner, David Schwope, MS, and Mick Smith, PhD from SOFT, and Gary Kay, PhD from Georgetown University. First Sergeant Tom Woodward, Maryland State DRE Program Coordinator discussed "Law Enforcement Tools for Detecting Drug and Alcohol Impairment" and Jeffrey Brent, MD, PhD and other ACMT members presented "Building a Forensic Practice." The course was judged by the attendees to be highly useful, leading to the course being offered again on the West Coast later in 2010. Plans are being developed for a two-day course on opiates for 2010 as well. We are hoping to have our ACMT colleagues participate in upcoming SOFT workshops as well.

## UPDATE FROM THE DRUG FACILITATED SEXUAL ASSAULT COMMITTEE (DFSA)

*Submitted by: Marc LeBeau, Ph.D., Committee Chair*

The Drug-Facilitated Sexual Assault (DFSA) Committee is observing its ninth year as a SOFT committee and continues to be very active. The current membership consists of **Fiona Couper, Amanda Jenkins, Sarah Kerri- gan, Marc LeBeau, Laureen Marinetti, Madeline Montgomery, Tim Rohrig, Joseph Saady, Matt Stillwell, Teri Stockham, and Chip Walls.**

The mission of the DFSA Committee is to:

- 1) Train fellow toxicologists, healthcare professionals, and law enforcement on the toxicological issues surrounding the successful investigation of DFSA;
- 2) Collate and disseminate data on DFSA issues;
- 3) Facilitate the development and promotion of research topics relevant to DFSA toxicology issues.

To fulfill this mission, three subcommittees currently exist:

- Education & Outreach
- Guidance
- Research

Among the many current projects of the DFSA committee is an ongoing effort to develop standardized methods for drugs and metabolites used in DFSA cases.

These methods are designed for standard laboratory instrumentation and will meet the recommended detection limits for urine proposed by the committee in 2005 (available at the SOFT website). Committee members and volunteers are participating in the validation steps necessary to ensure adequate sensitivity and specificity of these methods. Once completed, they will also be available on the SOFT website.

Recently the committee finalized a DFSA Fact Sheet to ensure that accurate information is available to investigators and prose-

cutors. You are encouraged to share this fact sheet with those agencies that use your services.

The committee is also developing an online survey to assess the number of DFSA. While it is recognized that the true prevalence of DFSAs is unlikely to ever be fully recognized, this survey will provide useful information of the number of these cases we are asked to investigate in our laboratories.

Finally, the committee has been asked to author and edit a special issue of *Forensic Science Review* on the topic of DFSA and the many drugs used to commit this crime. The DFSA Special Issue should be available in January of 2010 and is hoped to be a useful reference to add to your collection.

Anyone with an interest in assisting with any of these activities, please contact Marc LeBeau (marc.lebeau@ic.fbi.gov). The committee meets in-person at each SOFT Meeting, as well as at the AAFS Meeting.

## SUNSHINE / RIEDERS SILENT AUCTION 2009

SOFT's 4th annual "Sunshine / Rieders Silent Auction" at the Oklahoma City annual SOFT meeting netted \$3,822. Many of our loyal exhibitors and individual attendees donated a wide variety of valuable merchandise that attendees could bid on. After several days, at the designated "end", the highest bidder "won" the item. In many cases, the buyer walked away with some very good buys!

The Silent Auction was created 4 years ago to honor the late

Dr. Irving Sunshine and Dr. Fredric Rieders, who both notably had an affinity for "students of forensic toxicology". Since complete proceeds of the SOFT Silent Auction benefit the SOFT Student Enrichment Program, this event fittingly acknowledges the encouragement given and lifetime contributions in forensic toxicology by Drs. Sunshine and Rieders. Many current SOFT members fondly remember these two extraordinary mentors and credit them for many successful

careers in the forensic toxicology field.

Special thanks is extended to SOFT member, Laurie Tobler, who chaired this fun event, and the many volunteers who assisted with the 2009 Sunshine / Rieders Silent Auction.

2010 ANNUAL  
S.O.F.T. MEMBERSHIP  
DUES NOTICES TO BE  
MAILED IN JANUARY

## MEMBER NEWS

## JAMES GARRIOTT, PH.D - IN MEMORIAM

James C. Garriott, Ph.D., born September 27, 1938, in Seymour, Indiana, passed away September 1, 2009, at the age of 70. He grew up in Louisville, Kentucky



and graduated from the University of Louisville. Dr. Garriott received a Ph.D. from Indiana University in 1967. He

was a Diplomate of the American Board of Forensic Toxicology and served as a Director. Dr. Garriott was the Chief Toxicologist for Dallas County, Texas from 1970 to 1982, and for the Bexar County Forensic Science Center, San Antonio, Texas, until retiring in 1997. He was a Professor of Pathology and Pharmacology at the UTHSC in Dallas and in San Antonio and was presently an Adjunct Professor in the Department of Allied Health Sciences at the UTHSCSA. Dr. Garriott was the author of over 100

articles and book chapters in the toxicology literature, as well as editor and co-author of two toxicology reference books. He was particularly known as the editor of Garriott's *Medicolegal Aspects of Alcohol* now in its fifth edition. He has served on the editorial review board of four toxicology and forensic journals. He was also a recipient of the Gettler Award of the American Academy of Forensic Sciences for outstanding achievements in toxicology. A true inspiration to us all, Dr. Garriott will be greatly missed.

**Note from Naresh Jain:**

I have known Dr. Garriott since 1966 when I went to work at Indiana University where Jim was in the final year of finishing his Ph.D in toxicology. Since then Jim and I became close personal friends. During these four decades of friendship and professional collaboration, I have learned much about him - about his knowledge and intelligence, about his integrity and modesty, and about his character. Jim was an outstanding toxicologist who could easily work on

the bench, guide research and write with brilliance.

Jim's unexpected death has left a big void in our hearts and minds. He was humble and a down to earth man. I can tell you that of all people, Jim never looked down on those who looked up to him. He helped as many young toxicologists as he could. As a man he wouldn't hurt anyone's dignity or do anything to embarrass them. He always treated others with great dignity and respect.

Jim was a remarkable man with a much broader outlook on life. Besides his interest and dedication to forensic toxicology, he was an outdoor person, enjoyed hiking, bird watching and traveling. He also was a good rancher.

Jim sorely lacked pretense and pomposity. It is hard to think of any man having such modesty, humbleness and humility. I have a distinct feeling that if Jim were asked how he would like to be remembered, he would settle for simply being a decent man. We will forever miss him.

## JAT—CALL FOR PAPERS

Congratulations to Laureen Marinetti, who has been chosen as the 2010 Guest Editor of the Special Issue of the Journal of Analytical Toxicology (JAT).

High quality scientific abstract are requested for submission by mid-March for consideration. Manuscripts are reviewed in terms of originality, value to the field, technical content, and clarity. Com-

plete author guidelines can be found at the JAT website ([www.jatox.com](http://www.jatox.com)) or from their editorial office at (847) 647-2900 ext. 1302.

The 2010 Special Issue will include the *Experimental Design and Impact on Toxicology (EDIT) Award*. This prestigious award will recognize the (first) author of the paper which is judged to show ex-

cellent scientific experimental design and has a wide impact on the forensic toxicology field. All accepted manuscripts in which the lead author is a SOFT member will be eligible for consideration.



Laureen Marinetti  
[marinettiL@mcchio.org](mailto:marinettiL@mcchio.org)

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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., mailed quarterly (bulk mail) to its members. It is each member's responsibility to report changes of address to the SOFT Administrative Office. Non-members may receive ToxTalk for \$15 per calendar year. Checks payable to SOFT may be mailed to the SOFT Administrative Office. To submit articles or address ToxTalk issues 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.....Aug. 29-Sep. 2, 2011.....Nikolas Lemos
- 2012:** Boston, MA.....June 30-July 6, 2012.....Michael Wagner
- 2013:** Orlando, FL.....Oct. 26-Nov.3, 2013.....Bruce Goldberger

**SOFT 2010—RICHMOND, VIRGINIA**

Fist City.  
 The Big Acorn.  
 The 804.  
 River City.  
 Capitol of the South.  
**RICHMOND, VIRGINIA!**

Where did Patrick Henry proclaim "Give me liberty or give me death!"  
 Where is the first canal system created in the United States?  
 Where is the home of the oldest African-American bank, which is also the first to be established and run by a woman (Maggie Walker)?  
 Where was Bill "Bojangles" Robinson born?  
 Where was one of the world's largest military hospitals?  
**RICHMOND, VIRGINIA!**

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

**Richmond, Virginia!** Home of much legend and lore. A witness to great thought and birthplace of extraordinary action - a significant catalyst in the evolution of this country.

SOFT will be celebrating its 40<sup>th</sup> anniversary in 2010! We invite you to join us in this great historical city, to contemplate our own history and herald our future.

Please join us on Facebook and Twitter (both at SOFT2010) where we will share with you exciting news about our plans for the SOFT annual meeting! We have started forums on our favorite places to eat and must-see attractions while you are here! Also visit our meeting website (www.soft2010.org) to reserve hotel space and make your plans!

**SOFT 2010 Planning Committee**

- Michelle Peace.** . . . . . Co-Host  
*mrpeace@vcu.edu*
- Lisa Moak.** . . . . . Co-Host  
*ltarnai@aol.com*
- Sue Brown.** . . . . . Treasurer  
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- Carl Wolf.** . . . . . Workshop Co-Chair  
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- Dick Crooks.** . . . . . Workshop Co-Chair  
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- Julia Pearson.** . . . . . Scientific Program Co-Chair  
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- Justin Poklis.** . . . . . Scientific Program Co-Chair  
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- Tiffany France.** . . . . . Meeting Webmaster  
*info@frontdoorwebsolutions.com*
- Jeri Roper-Miller.** . . . Co-Exhibitor Liaison  
*jerimiller@rti.org*
- Peter Stout.** . . . . . Co-Exhibitor Liaison  
*pstout@rti.org*

**2009 S.O.F.T. COMMITTEE CHAIRS**

- | <u>Committee</u>                               | <u>Committee Chair</u>                          |
|--|---|
| Nominating.....                                | Christine Moore, Ph.D., DABCC                   |
| Membership.....                                | Sarah Kerrigan, Ph.D.                           |
| Strategic Planning.....                        | Marc LeBeau, Ph.D.                              |
| Budget, Finance, and Audit.....                | Robert Turk, Ph.D., DABFT                       |
| ToxTalk Co-Editors.....                        | Yale Caplan, Ph.D., DABFT<br>Vickie Watts, M.S. |
| ByLaws.....                                    | Yale Caplan, Ph.D., DABFT                       |
| Publications (JAT Special Issue) ....          | Jennifer Limoges, M.S., DABC                    |
| Awards.....                                    | Philip Kemp, Ph.D., DABFT                       |
| Drugs & Driving.....                           | Jennifer Limoges, M.S., DABC                    |
| Meeting Resource.....                          | Bradford Hepler, Ph.D., DABFT                   |
| Meeting Guidelines .....                       | Bradford Hepler, Ph.D., DABFT                   |
| Policy and Procedure.....                      | William Anderson, Ph.D.                         |
| SOFT Internet Web-Site.....                    | Bruce Goldberger, Ph.D., DABFT                  |
| Continuing Education.....                      | Ann Marie Gordon, M.S.                          |
| Web Based Continuing Ed.....                   | Peter Stout, Ph.D., DABFT                       |
| Laboratory Guidelines.....                     | W. Lee Hearn, Ph.D.                             |
| Ethics.....                                    | Aaron Jacobs, Ph.D.                             |
| Drug Facilitated Rape &<br>Sexual Assault..... | Marc LeBeau, Ph.D.                              |
| MS/MS Guidelines.....                          | Dennis Crouch, M.S.                             |

