



# TOXTALK

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## CONGRATULATIONS TO THE SOFT 2009 BOARD OF DIRECTORS

At the recent Business Meeting in Phoenix, the following individuals were elected to serve as the new 2009 S.O.F.T. Board of Directors:

2009 President—**Anthony Costantino**, Ph.D., DABFT  
2009 Vice President—**Bradford Hepler**, Ph.D., DABFT  
2009-2010 Treasurer—**Marc LeBeau**, Ph.D.  
2009-2011 Director—**Adam Negrusz**, Ph.D.  
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2008-2009 Secretary—**Sarah Kerrigan**, Ph.D.  
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2008-2010 Director—**Dan Anderson**, M.S., FTS-ABFT  
2008-2010 Director—**Dwain Fuller**, B.S., D-FTCB

The above distinguished group will spend countless hours making sure that this organization makes progressive, sound decisions to protect the integrity and reputation of SOFT, as well as to ensure a stable, continued successful organization well into the future.

Six years is the average length of commitment when beginning a rotation through the various Board positions. Current and past Board Members have much to be proud of. As the SOFT organization grows into an ever larger entity, the more difficult the organizational issues become. Please appreciate the magnitude of involvement these folks accept on a volunteer basis. They are nominated and elected because they are known by their peers as being dependable, ethical, and responsible individuals. Congratulations and grateful thanks to all of our SOFT Board Members.

## SUNSHINE / RIEDERS SILENT AUCTION

The 3rd annual "Sunshine / Rieders Silent Auction" at the Phoenix annual SOFT meeting netted \$5,254. Donated merchandise was bid on by meeting attendees. Not only is the auction a fun event, but complete proceeds benefit students interested in forensic toxicology through the SOFT Student Enrichment Program. The late Dr. Sunshine and Dr. Rieders always

focused their energy on academic encouragement, and this event seems to be an appropriate way to acknowledge their lifetime contributions in forensic toxicology.

Special thanks is extended to SOFT Member, Laurie Tobler and the many volunteers who worked at the 2008 Sunshine / Rieders Silent Auction to help raise funds for the 2009 SSEP program.



## PRESIDENT'S MESSAGE

### BY CHRISTINE MOORE, PH.D., DABCC

Greetings !

It was wonderful to see many of you in Arizona – we couldn't have asked for better company, weather, organization, food or science. I often think of SOFT as a big family – and once again that was apparent at the annual meeting. I was particularly encouraged by the many "First-Time Attendees" to the conference, and by the high number of young people who were present.

Many thanks to our co-hosts, Vickie Watts and Norm Wade along with their team of volunteers and of course, our wonderful SOFT Administrator, Bonnie Fulmer. Ann-Marie Gordon, Scientific Chair, and Dan Anderson, Workshop Chair are to be commended for their exceptional work on the scientific content of the meeting.

The Special Issue of the Journal of Analytical Toxicology was again a great success – many thanks to Dan Anderson for all his hard work. The Editor for 2009 will be Jennifer Limoges – welcome Jennifer to a tough job. The inaugural EDIT Award will be given in

2009 for the paper with the best experimental design and highest impact on our field to be published in the Special Issue. Please note, the lead author of the selected paper must be a SOFT member since it is a SOFT Award, so start thinking about your papers now – the deadlines are in March.

It is with great sadness that I tell the membership of the loss of two more esteemed colleagues in 2008 – Drs. John Cody and Richard Prouty. They will be sadly missed, along with Dr. Karla Moore, whose passing I reported earlier this year, all having made tremendous scientific contributions to our field. Our thoughts and prayers are with the families of our colleagues through this sad and difficult time.

As I have previously mentioned, the Board has begun to address ways to improve benefits for our members, with a view to expanding interest in our field by reaching out to other organizations, whether it be by providing continuing education services, networking opportunities, or hosting joint meetings. For example, in 2011 we will have a joint meeting with the International Association

of Forensic Toxicologists (TIAFT) and the Society of Hair Testing (SoHT) in San Francisco, and in 2013, Dr. Bruce Goldberger is exploring the possibility of a joint meeting with The National Association of Medical Examiners (NAME) in Orlando, FL. Currently Dr. Timothy Rohrig, is acting as liaison between SOFT and NAME to discuss a forward path regarding potential educational objectives and benefits for each society and Dr. Donald Frederick will explore possibilities with the American Academy of Clinical Toxicology (AACT). Other initiatives are also being considered.

Finally, I thank you for your loyalty and trust, and assure you that it has been my absolute pleasure and privilege to be your President for 2008. The support of the SOFT membership, as well as my own family, faith and friends are the most important gifts in my life. I wish Dr. Anthony Costantino, incoming President, and all the Board members the very best for 2009 and beyond.

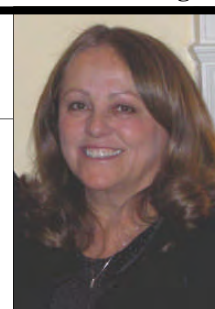
Stay cool,

*Christine*





## PHOENIX 2008 – A RECORD SUCCESS IN THE BEAUTIFUL SOUTHWEST



The mission of SOFT is to promote and develop the science of forensic toxicology, and the 2008 program fulfilled that mission providing an extensive week of educational opportunities including workshops, platform and poster sessions all in a relaxing southwestern resort atmosphere. The 2008 annual meeting had an all-time record of over 1000 meeting registrations and a sold out exhibit hall with 86 booths representing 76 exhibiting companies. The SOFT 2008 Meeting Co-Hosts, **Vickie Watts** and **Norman Wade** provided attendees with a week of perfect weather, plentiful scientific content, diverse evening entertainment, good friends, delicious feasts, and more fun packed into one week than anyone thought possible.

Through the efforts of the Workshop Coordinator **Dan Anderson**, the Scientific Program began with 12 focus-oriented workshops. The workshop attendees registered for an all time record of 1691 workshop units eligible for continuing education credit through AACC. On Monday four full-day workshops including the Effects of Drugs on Human Performance, Chemstation Productivity, Pharmacogenomics for Dummies, and Overview & Review of Forensic Toxicology along with three half day workshops on Sympathomimetic Amines and Tryptamines, Overview of Biomarkers of Alcohol Testing and ISO 17025 Accreditation were offered. Tuesday's workshops included two full-day workshops on Pain Management and Addiction, and Excel Spreadsheet Design/Statistics, and three half-day workshops on Critical Flicker Fusion Confusion, Applications of LC-MS in Human and Veterinary Toxicology and Naturally Occurring Pharmacologically Active Substances Native to the Southwest.

The Program Chair, **Ann Marie Gordon**, prepared a scientific

program that included 129 abstracts that were presented as 32 platform and 97 poster presentations. Given our warm southwest weather SOFT attendees experienced our first outdoor poster session on Wednesday afternoon.

Thanks to the efforts of the Coordinators, **Jeri Ropero-Miller** and **Amanda Gallegos** the SOFT Student Education Program (SSEP) provided 50 Arizona College students with a full day of activities designed to expose them to two local toxicology laboratories, the Phoenix Crime Laboratory and the Maricopa County Forensic Science Center and to practicing forensic toxicologists.

The SOFT Planning Committee sends a genuine and loud "Thank You" to the many exhibitors for their generous financial sponsorships that funded so many wonderful events enjoyed by all. The Evening events throughout the week were designed with SOFT and the warm hospitality of the southwestern desert in mind. **Monday** evening highlighted the Tier I Hospitality Receptions hosted by SOFT's major meeting sponsors in the resort's beautiful patios adorned by waterfalls and palm trees. The **Tuesday** evening Welcoming Reception showcased our favorite southwestern foods with the attendees enjoying the opening of the Exhibit hall, which flowed onto the outdoor patios. The Elmer Gordon Forum, attended by over 400 participants went long into the night with many new and first time meeting attendees voicing questions on forensic toxicology to the respected audience of pioneers in the field. This event filled evening was followed by the "Nite Owl Reception IX" hosted by Cerilliant, at the nearby Rustler's Rooste, where guests could "attempt" their mechanical bull ride, play casino games, eat, drink and mingle with friends looking down on the lights of the Phoenix valley. **Wednesday** evening began again in the exhibit hall with a "happy hour", which was followed by "Sunset at the Oasis", a poolside luau

experience with a steel drum band providing an entertaining night of Caribbean music under the moon and stars. **Thursday** evening was the featured special event of the meeting, the President's Banquet and Masquerade Ball. Attendees adorned elegant satin masks in all forms, colors and the dance floor stayed crowded with a jubilant group of sleep deprived professionals. Interspersed before and among the many other meeting events were the Fun Run, held early Thursday morning, and the Sunshine Rieders Silent Auction, Tuesday through Thursday, the SOFT Business Meeting, Thursday afternoon, and many other organization meetings of the NLCP, NSC, CAT, ABFT, AAFS, as well as various SOFT Committee meetings.

A special thanks goes out to Thermo Scientific for sponsorship of the unique SOFT-2008 meeting bags as well as the Internet Café, which was in constant use for the entire week. Our thanks also to Agilent Technologies for sponsorship of the meeting lanyards and Tinsley Preston of Preston Publications for the continued support in providing the JAT Special Issue to all the attendees of the SOFT annual meeting. The SOFT 2008 Organizing Committee would like to graciously thank all of the meeting volunteers and the SOFT Board for their help and support in making this a successful meeting.

- **Vickie Watts, Norm Wade:** Meeting Co-Hosts
- **Ann Marie Gordon:** Scientific Program Chair
- **Dan Anderson:** Scientific Workshop Coor.
- **Doug Kramer:** SOFT-2008 Website Developer
- **Peter Stout, Jeri Ropero-Miller:** Exhibitor Liaison Specialists
- **Bonnie Fulmer:** Registration Coordinator
- **Robert Herndon:** Events Coordinator
- **Diane Mertens-Maxham, Cindy Hogan:** Promotions
- **Frank Wallace, Dale Hart, Carl Horn:** AV
- **Deborah Denson, Diane Mertens-Maxham:** Volunteer Coordinators
- **Laurie Tobler:** Silent Auction Coordinator
- **Don Frederick:** Continuing Education
- **Jeri Ropero-Miller, Amanda Gallegos:** SOFT Student Enrichment Program

# 12TH ANNUAL FUN RUN

Over 95 individuals ran or walked a course at the base of South Mountain at the 2008 SOFT Meeting in Phoenix. Special thanks to **Rob Herndon**, the Fun Run Coordinator, who established the path to follow, recruited the volunteers, and met the runners upon completion of their run.

A note of appreciation is also extended to the volunteers who

directed the participants along the course: **Sue and Jenna Cooley, Ian Duffy, Amanda Gallegos, Donna Honey, Amy Lais, and Norm Wade.**

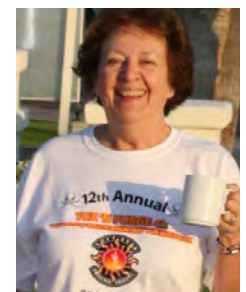
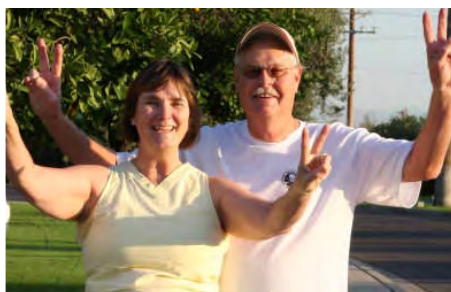
The annual Fun Run has gathered quite a following of fitness fans over the years. Participants received the 2008 Fun Run tee shirt and three established winners each received an Apple iPod

Nano, generously donated by sponsor, **Agilent Technologies.** Other generous sponsors of the Fun Run were **Cerilliant, OraSure Technologies, Quality Assurance Service Corp., and Shamrock Glass.**

This year's 12th annual Fun Run was dedicated to **Karla Moore**, who passed away earlier this year, and who began this Fun Run tradition 12 years ago.



Congratulations to all participants but especially the 1st Place Men's Runner, **Gordon Nelson** (front row center in red/white) and the 1st Place Women's Runner, **Ilene Alford** (front row fourth from left).



GRATEFUL THANKS TO S.O.F.T.'S GENEROUS EXHIBITORS

Each year the list of companies exhibiting and sponsoring our annual meeting becomes more impressive. The financial commit-

ment from exhibitors is absolutely essential in keeping meeting registration fees low for attendees. The 2008 exhibiting companies are

listed below. Those companies who also have committed additional financial sponsorship of the 2008 meeting are in bolded print.

**Aegis Sciences Corp.**

**Agilent Technologies**

AIT Laboratories

Alternative Biomedical Solutions

American Solutions for Business

**Applied Biosystems**

**Axiom Diagnostics, Inc.**

Beckman Coulter

Bio Integrated Solutions, Inc.

**Biochemical Diagnostics**

Biotage

Branan Medical Corp.

Bruker Daltonics

Caliper Life Sciences

**Campbell Science**

**Capitol Vial**

**Cerilliant Corp.**

ChemWare, Inc.

Chromsys, LLC

CMI, Inc.

Data Unlimited Int'l., Inc.

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Parker Hannifin Corp.

DPX Labs, LLC

Express Diagnostics

GBF Medical Group

GenTech Scientific, Inc.

**GERSTEL, Inc.**

Grace Davison Discovery Sciences

Hamilton Company

**Immalysis Corp.**

Integrity Products, Inc.

**International Diagnostics Systems**

JEOL USA, Inc.

Justice Trax, Inc.

Lawyers & Judges Publishing

LEAP Technologies

LECO Corp.

**Lin-Zhi International, Inc.**

**Lipomed, Inc.**

Microliter Analytical Supplies

**Neogen Corp.**

NMS Labs

**OraSure Technologies**

Orochem Technologies

Perkin Elmer

Pharmaceutical Press

Phenomenex

**Preston Publications (JAT)**

**Quality Assurance Service Corp.**

**Randox Laboratories USA**

Regis Technologies

**Restek Corp.**

**Roche**

**RTI International**

Rudolph Research Analytical

Sciteck Diagnostics, Inc.

**SGE Analytical Science**

**Shamrock Glass Company**

**Shimadzu Scientific Instruments**

Siemens Healthcare Diagnostics

Silver Dream

**Speware Corp.**

Springer US

Standard Register

**TASC, Inc.**

**Thermo Scientific**

**United Chemical Technologies**

**UTAK Laboratories, Inc.**

Varian Inc.

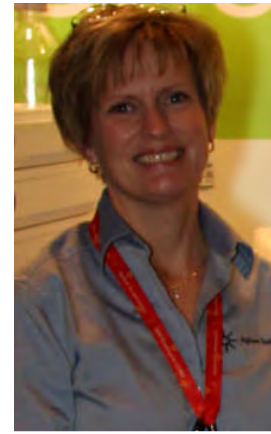
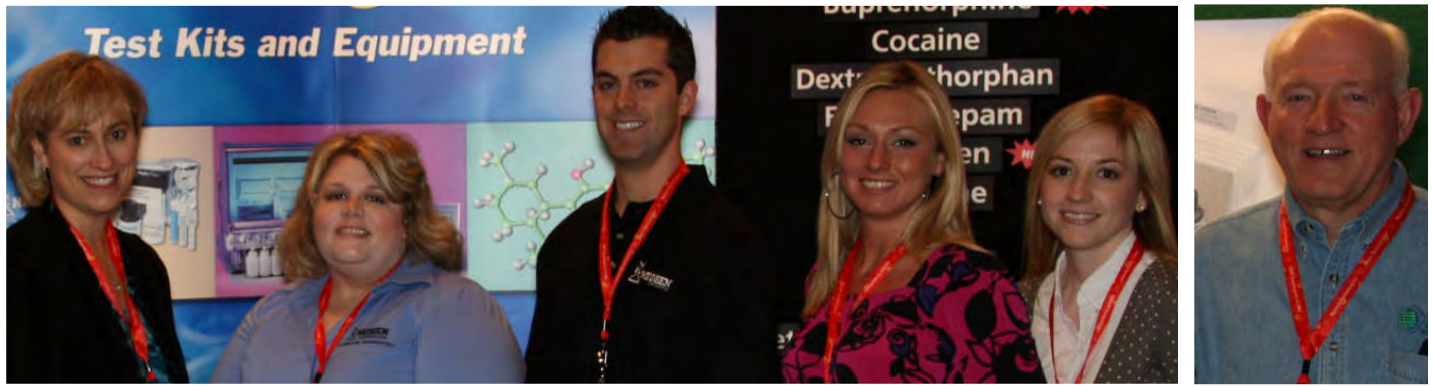
**Venture Labs, Inc.**

VertiQ Software, LLC

**Waters Corp.**

XLINK Bioscience









**Introduction**

Drug testing evidences which are based only on laboratory results may not accurately represent true results. Third quality control samples and results are used by the Officer (MRG) determination of valid results.

**Objective**

- To evaluate the relationship between laboratory and MRG verified results reported to employer (FR) and non-regulated (NR) workplaces.
- To examine synthetic opioid and benzodiazepine test results.

**Results Section 2. % Total Verified +s by Drug Class**

Drug Class	2006	2007
Marijuana	84.8%	84.8%
PCP	2.0%	6.0%
Marijuana	5.2%	6.0%
Opium	2.0%	0.0%
Opium (MRG)	0.0%	0.0%

**Results Section 3. % Total Reversed +s by Drug Class**

Drug Class	2006	2007
Marijuana	87.7%	79.9%
PCP	0.0%	0.0%
Opium	18.4%	0.0%

**Results Section 4. Non-Regulated Testing for Synthetic Opioids**

Specimens Tested	Specimens Positive (N)	Specimens + Oxycodone	Specimens + Oxycodone
2006	185,883	774	129
2007	211,211	1,043	63

**MRG Verified Positive vs. Reversed by MRG**

Year	Natural Reversed	Synth Reversed
2006	1,989	1,749
2007	2,401	43

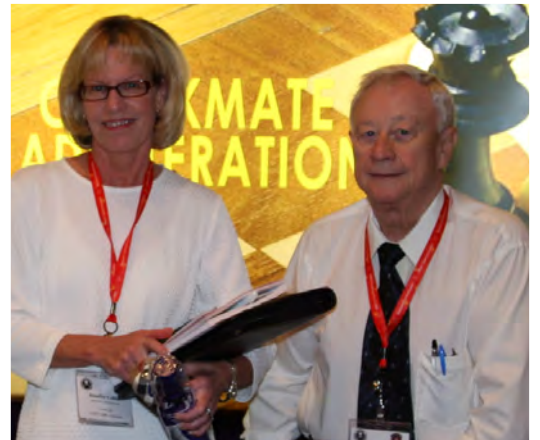
**Results Section 6. Federally Regulated vs. Non-Regulated**

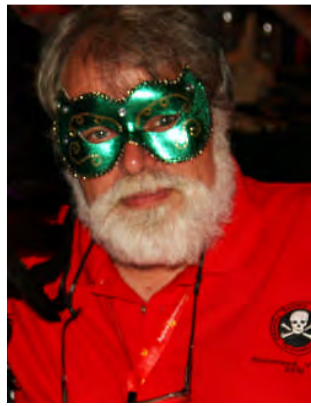
Year	% Laboratory Confirmed +	% Overall MRG Verified +	% Laboratory Confirmed +	% Overall MRG Verified +
2006	0.67	1.25	0.56	0.91
2007	0.74	0.99	0.33	0.14



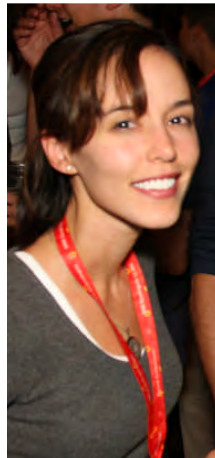


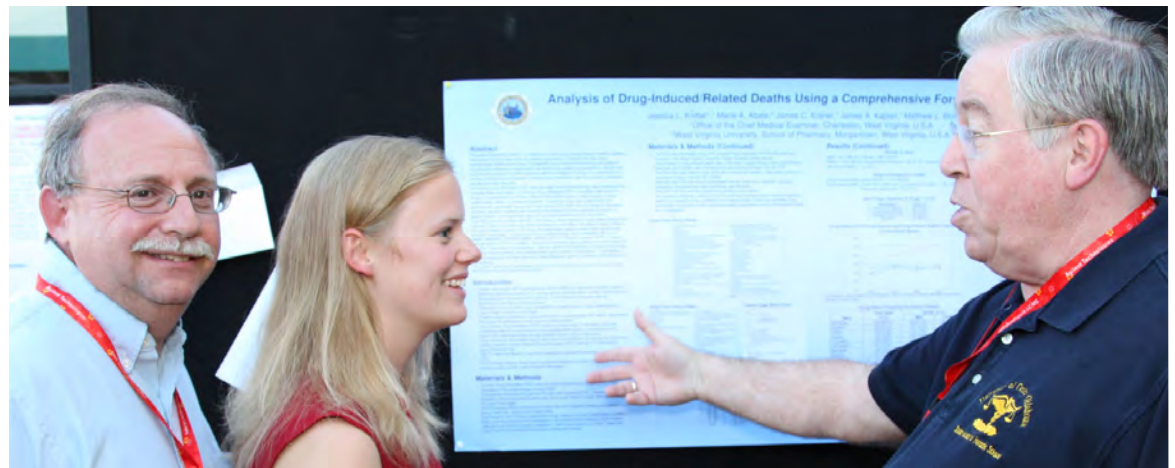


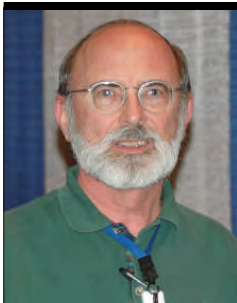












## CASE NOTES

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

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

### CASE NOTES #1: PRETTY BUT DEADLY

From the **Miami Dade Medical Examiner Dept.**, Miami, Florida  
 Mary E. Zaney, Toxicologist, Wilmo Andollo, Toxicologist, Emma O. Lew, M.D.

#### Introduction

Angel's Trumpets is the common name for *Brugmansia* which is a genus of six species of flowering plants in the Solanaceae family. The name refers to the large, pendulous trumpet-shaped flowers, which can be white, yellow, pink, orange or red. The plant contains the tropane alkaloids, scopolamine and atropine, which are both classified as anticholinergic drugs. In some cultures the plants are ingested in shamanic rituals, and they are also abused recreationally, due to their hallucinogenic properties. All parts of *Brugmansia* are highly toxic and ingestion can be fatal.



#### Case History

This case involves a 19 year old hispanic male with no known medical problems. He and a friend picked 18 bell shaped flowers, boiled them in water and drank the resulting brown liquid. The subject

complained of feeling hot, had slurred speech and began behaving erratically (hallucinogenic in nature). He said he had blurred vision and a lack of saliva.

Later that same day the police were dispatched to a burglary in process involving this man. The subject resisted arrest and was combative towards an officer (tried to kick and bite him). The officer punched him repeatedly in the face and handcuffed him. While traveling in the back of the police car he repeatedly banged his head against the window. He was transported to the hospital where he arrived with altered mental status and hyperthermia (temperature of 106 ° F). His blood pressure was 60/40 with a heart rate of 200. He had dilated pupils and bleeding from multiple sources. He was admitted to the ICU with a diagnosis of anticholinergic intoxication, disseminated intravascular coagulation, status post assault. His condition deteriorated and he died the following day.

#### Autopsy Findings

- Generalized edema with hydrothoraces and hydroperitoneum
- Bilateral marked pulmonary edema
- Cerebral swelling
- Hemorrhagic diathesis with petechiae/ecchymoses in

tongue, laryngeal and tracheal mucosa, visceral pleura, epicardium and endocardium, gastric mucosa, right testis.

- Mild hepatic pallor
- Minor trauma
- a. Facial abrasions and ecchymoses
- b. Right subgaleal hematoma
- c. Abrasions on right forearm, back and left knee

#### Toxicology Results

The biological samples were screened by EMIT followed by GC/MS and were positive for the following:

Antemortem Urine	Gastric
Atropine	Phenytoin
Scopolamine	
Cannabinoids	
Lidocaine	
Acetaminophen	

A flower identical to the one the boys picked was analysed by GC/MS following a basic extraction and was positive for the following:

Angel Trumpet Flower
Atropine
Apoatropine
Scopolamine
Methscopolamine

## CASE NOTES #1 (CONTINUED)

Tropane Alkaloid Quantitation was performed by GC/MS on the ante-mortem samples and the brown liquid the boys drank (see adjacent chart).

### Conclusion

The cause of death was determined to be Acute Atropine Toxicity and the manner of death was Accidental.

Specimen	Analyte	Result
AM Blood	Atropine Scopolomine	Detected < 0.005 mg/L (LOQ) Not Detected
AM Serum	Atropine Scopolomine	Not Detected Not Detected
AM Urine	Atropine Scopolomine	2.3 mg/L 0.13 mg/L
Brown Liquid (Brew)	Atropine Scopolomine	12.5 mg/L 14.2 mg/L

## CASE NOTES #2: SUICIDE OR HOMICIDE?

From the **Miami Dade Medical Examiner Dept.**, Theresa Hippolyte, M.S., Toxicologist, George Hime, M.S., Toxicologist, Bruce A. Hyma, M.D.

### Introduction

Ethanol is a central nervous system depressant, but at low doses can act as a stimulant by depression of inhibitory centers. It is used primarily in social settings and rarely used for medicinal purposes (1). Ethanol is very water soluble and distributes evenly throughout the human body. This allows ethanol concentrations to be estimated based upon a subject's sex, weight, and degree of adiposity (2). Ethanol is typically absorbed quickly from the stomach, small intestine, and colon. Maximal ethanol blood concentrations can be obtained between 30 to 90 minutes after the last drink (1). The behavioral effects of ethanol depend on the dose. The greater the dose, the more intense the behavioral effects. At blood alcohol concentrations of 0.21-0.30 a person may experience aggression, reduced sensations, depression, and stupor. Behavioral effects at 0.31-0.40 BAC, a person may experience unconsciousness, coma, and possible death. At blood alcohol concentrations of 0.41 and greater, death is a possibility (3).

Oxycodone is a semi-synthetic narcotic analgesic that is

often distributed in combination with other drugs (acetaminophen, aspirin, ibuprofen, phenacetin or caffeine). It is available as 2.5-10 mg normal-release and 5-160 mg extended-release capsules and tablets typically but is also distributed as liquid (1-20 mg/mL), rectal suppository (15 mg), and parenteral injection (10 mg/mL) (2). Oxycodone is prescribed for treatment of acute pain especially in the post-operative period (1). Some of the adverse effects experienced by subjects undergoing oxycodone pain management are: nausea, somnolence, dizziness, asthenia, diaphoresis, constipation, and urinary retention. In cases of overdose a subject may experience any of the following effects: stupor, coma, muscle flaccidity, severe respiratory depression, hypotension, and cardiac arrest. In one study, two adults committed suicide using oxycodone, their postmortem blood levels were 4.3 and 14 mg/L (2).

### Case History

A 22 year old black woman was discovered by her live-in boyfriend with a self-inflicted gunshot wound to the right temple. Prior to her death, the decedent had an ar-

gument with her boyfriend over his possible infidelity. The boyfriend left for work as a TSA agent and received an email a short while later from the deceased saying goodbye. Upon receiving the email, the boyfriend rushed home to find the decedent in bed with a self-inflicted gunshot wound to the head and the gun still in the decedent's hand. Upon further inspection a suicide note was found. When fire rescue responded to the scene, the deceased was pronounced dead.

The boyfriend was questioned and found to have gunshot residue on his hands. Supposedly the gunshot residue was due to his job as a TSA agent. Videotapes were taken from surveillance cameras around the decedent's residence to confirm the boyfriend's story. Review of the videotapes proved to be consistent with the accounts of his entering and leaving the residence. Emails from the boyfriend to a friend and the decedent were taken into custody for review. The emails to a friend were consistent with possible speculations of infidelity. The mother of the deceased was interviewed by the police also. According to the mother, she had

## CASE NOTES #2: (CONTINUED)

spoken to her daughter an hour prior to the incident. She described the decedent as upbeat and lucid not consistent with a person intending to commit suicide. The deceased did not suffer from any known medical conditions and had never had any suicidal ideations in the past.

### Postmortem Toxicology

Postmortem aorta blood, mixed heart blood (serum), blood cells, bile, gastric lavage, and vitreous humor were submitted for toxicological analysis. The analysis included a blood EIA screen, volatile screen by GC-FID, basic drug screen by GC-NPD, confirmation of opiates by GC-MS, and Opiate Quantitation by GC-MS. The toxicology results reported below are from the final toxicology report.

### Ethanol GC-FID

Aorta Blood	0.41%
Vitreous Humor	0.03%
Bile	0.56%
Serum	0.34%
Gastric	0.61%

### Opiate Quantitation (Oxycodone)

Aorta Blood	12.3 mg/L
Vitreous Humor	0.08 mg/L
Bile	10.3 mg/L
Blood Cells	6.1 mg/L
Serum	9.0 mg/L
Gastric	40 mg Total

### Discussion

Based upon the levels of ethanol and Oxycodone in the decedent's body at the time of death, she would have more than likely died from an overdose based upon literature cited above. The decedent however was able to hold a lucid

conversation one hour prior to her death, without her mother detecting any impairment in her daughter's speech or thought processes. She was then able to hold a gun steady to her right temple and perfectly execute her suicide.

The level of ethanol in the decedent's blood should have left her in an incapacitated state or unconscious. The ethanol concentration in the vitreous humor is not consistent with the findings in the other samples analyzed. This could be explained by the decedent cutting off circulation to the vitreous humor and not allowing equilibration to occur after she shot herself in the head.

In addition, the levels of Oxycodone in all the specimens analyzed excluding the vitreous humor were at toxic levels which are typically seen in overdose cases. The negative adverse effects caused by overdose like stupor, coma, muscle flaccidity, severe respiratory depression, hypotension, and cardiac arrest should have prevented the decedent from being able to shoot accurately and precisely.

The mystery of this death is how could the deceased carry out her suicide with an acutely toxic level of ethanol and oxycodone? Absorption and distribution of the ethanol and oxycodone took some time; why did she not succumb to these drugs before she was able to commit suicide? Could the deceased be able to consume and achieve these levels after the conversation with her mother approximately one hour before her death? And; what is the significance of the ocular fluid results relative to the blood?

Suicide or homicide? Your theories and suggestions would be appreciated. Please send comments to: [olsentm@miamidade.gov](mailto:olsentm@miamidade.gov).

### References

1. J.G. Hardman, L.E. Limbird, P.B. Molinoff, R.W. Ruddon and A.G. Gilman. *Goodman & Gilman's The Pharmacological Basis of Therapeutics*, 9<sup>th</sup> ed. McGraw-Hill, New York, 1996.
2. R.C. Baselt. *Disposition of Toxic Drugs and Chemicals in Man*, 8<sup>th</sup> ed. Biomedical Publications, Foster City, CA, 2008.
3. <http://science.education.nih.gov/supplements/nih3/alcohol/guide/info-alcohol.htm>

## 2009 ANNUAL MEMBERSHIP DUES

Enclosed with this mailing of ToxTalk is the annual membership dues notice. In 2009, there will be a \$10 increase, from \$50 to \$60, that was unanimously approved at the SOFT annual business meeting in Phoenix. The last dues increase was in 1996 when dues changed from \$35 to \$50 per year.

Dues payments may be made by check and mailed to the **SOFT Admin. Office**, 1 N. Macdonald St., Suite 15, Mesa, AZ 85201 or paid on-line by charge card at the SOFT website, [www.soft-tox.org](http://www.soft-tox.org) or by telephone toll free, **888-866-7638** to the SOFT Admin. Office, M-F, 9 am—1 pm MT. Please be sure to notify the office of any changes in contact information with your dues payment.



## CASE NOTES 3: VOLATILES TESTING AT THE GEORGIA BUREAU OF INVESTIGATION, DIV. OF FORENSIC SCIENCES

By: Leigh Champion and Kasey Wilson

### **Introduction**

In April 2008, the Georgia Bureau of Investigation Division of Forensic Sciences (GBI DOFS) Toxicology Section resumed analytical testing for volatile compounds after several years of not performing the service. Volatile compounds are chemicals such as aerosols and solvents which can be abused and may lead to legal consequences such as a DUI or even result in death. Many common household products are abused by inhaling the chemical directly from a container (snorting or sniffing), by “huffing” (inhaling from a rag soaked with the chemical) or by “bagging” (spraying the chemical in a bag and then placing the bag around the head or face).

The GBI DOFS Toxicology Section is currently testing for a wide range of volatile compounds. These compounds include, but are not limited to, propellants such as 1,1-difluoroethane which is commonly used in aerosol dust removers (aka keyboard cleaners) and solvents which include toluene, hexane and methylene chloride which are ingredients in paints, paint thinners and glues. Volatile determinations are performed when requested by the officer in a suspected DUI case or when requested by a medical examiner in a postmortem case. Additional cases have also been analyzed for volatile compounds after inadvertently finding an unknown suspected analyte during routine headspace gas chromatography (HSGC) for blood alcohol analy-

sis. Compounds reported from blood alcohol testing include: ethanol, methanol, acetone and isopropanol.

### **Case Histories**

From April through August 2008, GBI DOFS has performed volatiles testing on twenty-nine cases. Twenty-one of these cases are antemortem cases and the other eight are postmortem. Of the twenty-nine cases, nineteen are positive for one or more volatile compounds. The other ten cases are negative for common volatile compounds.

Seventeen of the nineteen positive cases contain 1,1-difluoroethane. Thirteen of the cases that are positive for 1,1-difluoroethane involve motor vehicle accidents, three are suspected DUIs and one is a drowning related to inhalant abuse. Of the MVAs, five involve injuries, five are without injuries, one does not indicate if there are any injuries and two are fatalities from the same accident.

The paperwork submitted by the medical examiner for the two MVA fatality cases indicates that a 27 year old male driver and a 19 year old female passenger left a party to get something to eat when they were involved in a single car MVA resulting in a fire. Onlookers were unsuccessful in attempting to remove the two individuals because both victims were pinned in the vehicle. Witnesses advised that both the driver and passenger were conscious and talking after the accident. Blood alcohol testing re-

vealed that both victims were negative for ethanol, but an additional suspected analyte found in both replicate blood alcohol analysis of both victims suggested the presence of a volatile compound. Both cases were then tested for common volatiles and found to contain 1,1-difluoroethane. The driver also tested positive for norflurane (another propellant). Norflurane could not be confirmed in the blood of the passenger.

Another postmortem case concerns a 23 year old male who drowned after being seen with a can of “computer dust cleaner.” The can of “computer dust cleaner” was found in the water near the vicinity where the victim was last seen by a family member who rendered aid to the victim. Later at the victim’s home two more cans of “computer dust cleaner” were found under the victim’s pillow. The victim’s blood tested positive for 1,1-difluoroethane.

In the officer submitted paperwork for a suspected DUI case, the officer indicates the subject was “huffing paint”. This case was analyzed and contains toluene at 2.0 mg/L. Officer submitted paperwork for another suspected DUI case requested a test for “paint thinner”. Subsequent conversation with the officer revealed the subject was suspected of huffing paint thinner. The case was tested and was negative for toluene; however, a significant amount (0.057 g/100mL) of acetone, another constituent of paint thinner,

## CASE NOTES #3: (CONTINUED)

was found and reported during the blood alcohol analysis.

In one postmortem case, a 15 year old female was found in a bedroom with her head “buried in a towel” and “her nostrils and face covered in shoe polish”. A can of shoe polish was located near the victim. The victim’s blood and the can of shoe polish were submitted. The blood was analyzed and found to contain butane, cyclohexane, heptane, 2-methylhexane and 3-methylhexane. A follow-up test was performed on the can of shoe polish and found to be consistent with the blood results.

### Experimental

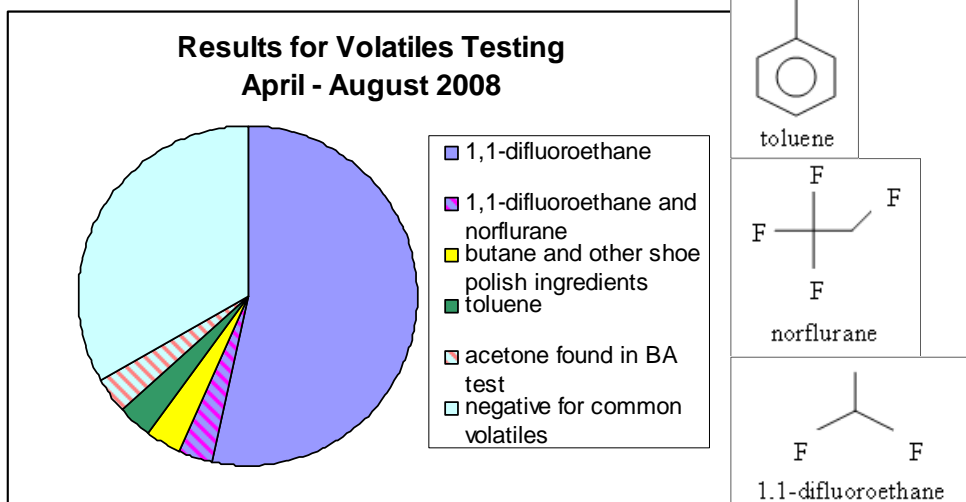
GBI DOFS tests for volatiles by headspace gas chromatogra-

phy mass spectrometry using an Agilent 7694 headspace autosampler with an HP 6890 Series GC and 5973 Mass Selective Detector. All cases suspected of containing volatile compounds are screened by a low molecular weight method using an Agilent J&W GS-GASPRO column and a high molecular weight method using an Agilent J&W HP-5MS column. Some compounds, such as toluene, may be identified on both the low and high molecular weight methods. Other compounds, such as 1,1-difluoroethane, only show up using the low molecular weight method. Any cases found positive for compound(s) found only by one method are then reanalyzed in order to have two independent tests for reporting purposes.

Most compounds are reported as qualitative only; however, toluene is routinely reported quantitatively due to possible occupational exposure. Other solvents may also be reported quantitatively if the need arises.

### Discussion

On average the GBI DOFS Toxicology Section is currently performing approximately six volatile determinations per month. The volatile compound with the highest number of reported positive cases is 1,1-difluoroethane and most of these cases are related to people driving a motor vehicle. Submission paperwork for the majority of the positive 1,1-difluoroethane cases indicate that the subject inhaled an aerosol and many specifically identify “difluoroethane”. Conversations with law enforcement reveal that many subjects have the aerosol containers in their vehicle at the time of the accident or traffic stop. Some of the aerosol containers indicate that the dust remover contains a “bitterant/deterrent” to deter inhalant abuse; however, based on the number of positive cases reported, individuals are still abusing aerosols despite the additives.



## SINCERE THANKS

Sincere thanks to long time SOFT member, Tinsley Preston of Preston Publications for his continued alliance w/ SOFT in providing the annual Journal of Analytical Toxicology Special Issue to all attendees of the SOFT annual meetings. Mr. Preston also regularly donates an annual subscription of JAT to the Sunshine/Rieders Silent Auction event (valued over \$500) which

really helps to bump the fundraiser bottom line.

Last but not least, Tinsley has kindly contributed hundreds of photographs over the last few years to share with ToxTalk recipients that make readers smile and re-live good times.

Tinsley’s dedicated support of SOFT is so appreciated by all.



## CASE NOTES #4: KETAMINE & HEROIN DRUG DEATH

From George F. Jackson, Ph.D., William A. Dunn, M.S., Lyla Perez, MD of the E.H.A. Institute of Forensic Science, State Toxicology Laboratory and Regional Medical Examiner's Office, Newark, NJ

We present a post-mortem case analysis of a 24 year old single male who imbibed ketamine and heroin. The decedent had a history of recreational use of ketamine, but not heroin.

The decedent was discovered by his parents in their residence. Investigation found bottles of unknown pills of various sizes,

some empty and others near-full, located at the scene. Autopsy did not reveal any medically significant findings.

Comprehensive analysis was performed on various post-mortem tissues, including femoral blood, urine, stomach content and liver.

All submitted tissues and evidence (pills) were subject to standard analytical screening and mass spectrometry confirmation protocols. Positive findings of the analysis are as follows.

The Medical Examiner ruled the death accidental.

### Blood

Morphine (Free)	0.20 mg/L
Ketamine	0.32 mg/L
Norketamine	0.18 mg/L

### Liver

Ketamine	0.24 mg/Kg
Norketamine	0.72 mg/Kg

### Stomach Contents

Total weight received: 244 gms	
Ketamine	62.0 mg/Kg
Norketamine	46.8 mg/Kg

### Urine

Ketamine	3.00 mg/L
Norketamine	5.20 mg/L
Codeine	0.45 mg/L
Morphine (free)	4.40 mg/L
6-mono-acetyl-morphine	1.35 mg/L

### Pills

Positive for acetaminophen and alprazolam

## SEEKING WORKSHOP OPTIONS FOR 2009

The Planning Committee for the 2009 annual meeting is seeking Workshop Proposals. Included with this mailing of ToxTalk is detailed information that gives complete instructions how to submit a proposal for consideration.

Workshops could be full or half day in length; targeted at advanced, intermediate, or novice level of audience knowledge. Workshops should qualify for Continuing Education units of credit, be focus oriented and promote or develop the science of forensic toxicology.

Please consider chairing a workshop or suggesting a specified kind of workshop that would be interesting to attend.

Please discuss any workshop ideas with the **2009 Workshop Coordinator, John Soper, Ph.D.**, [jwsoper@integrity.com](mailto:jwsoper@integrity.com) (or call 405-954-6265).

The posted deadline to submit a workshop proposal is **March 1, 2009** so please give this some immediate thought to perhaps help provide educational opportunities to fellow SOFT members at future SOFT meetings.



**Dr. John Soper,  
2009 Workshop Coordinator**



## DRUGS IN THE NEWS

### Methadone: Old Drug, New Challenges

By Dwain C. Fuller, D-FTCB, TC-NRCC

#### Introduction

The late Professor Randy Pausch began his *Last Lecture* with the statement, “My father always told me, ‘If there is an elephant in the room, introduce them.’” With that in mind, I would like to introduce you to the toxicological elephant in the room, the fact that there has been a huge increase in methadone-related deaths over the past ten to fifteen years. No introduction is really necessary, is it? Forensic toxicologists are quite aware of this trend, but for the most part, we haven’t discussed it much, at least publicly. The media has reported on these deaths at length, but as they often do, fail to actually understand them, and more often than not, they simply cloud the issue. I read an article recently with the following quote: “(Methadone) is killing people at therapeutic doses!” I want to ask, “Therapeutic for whom? Obviously not the patient who died.” Or perhaps the question, “What exactly is the therapeutic range versus toxic or even lethal range for any opioid?” As forensic toxicologists we know we must consider many issues when interpreting opioid concentrations surrounding a death: What was the goal of the opioid therapy; analgesia, narcotic replacement? What was the likely tolerance of the patient? Did the patient have any co-morbidities? Was the patient taking other medications? To name but a few. These issues notwithstanding, the fact remains, the num-

ber of methadone-related deaths has skyrocketed.

Those of us who have investigated or studied many of these deaths can probably recite the circumstances surrounding the death even before reading the report: The decedent usually has begun using methadone within the last 5 to 7 days, was observed to be sleeping and “snoring loudly” prior to being found dead with, often profuse, pulmonary edema. There is also a good chance that a benzodiazepine was involved as well.

To be quite candid, I am afraid toxicologists may be somewhat reticent to speak publicly about this trend for fear that our words will be taken out of context by some attorney the next time we testify about a methadone death. This fear is not unfounded. I too have been called upon to testify in disputes involving both sides of the civil litigation arising from these deaths. It is for this reason that I feel it prudent at this point to issue this disclaimer:

*Every case is different, with differing: dose, patient tolerance, co-morbidities, drug interactions, physical circumstances, etc. No attempt has been made by the author of this article to provide an exhaustive treatise on the complex subject of methadone, pharmacology, use, abuse, toxicity, or death.*

#### History

Methadone was first synthesized by German scientists during World War II after the United

States and their allies cut off the opium supply to Germany. The synthetic opioids meperidine and propoxyphene were also developed during this time. Methadone was given the trade name, “Dolophine”. A common misconception, or urban legend, about Dolophine, was that it was named in tribute to Adolf Hitler, evolving from the original name, “Adolphine”. This is untrue. The name Dolophine was derived from the Latin root “dolor,” meaning pain, and was actually named by the American branch of Eli Lilly, after the war.

Methadone was brought into the United States in 1947, and for the most part, until recently, has been used primarily as a treatment for narcotic addictions, mostly involving heroin.

#### Pharmacology

Methadone has much the same effects as morphine but differs in some very important ways which we will discuss in more detail later. Although in most countries the drug is administered as the racemic mixture of (R)- and (S)- isomers, (R)-methadone accounts for most, if not all, the opioid effects. Methadone primarily acts at the  $\mu$  opioid receptor. According to one source, methadone has a bioavailability ranging from 36 – 100% and a T<sub>max</sub> of 2.5 – 5 hours. Its volume of distribution ranges from 2 – 13 L/kg and its half-life ranges from 4 – 130 hours, with the half-life of the (R)-enantiomer being somewhat longer.

## DRUGS IN THE NEWS (CONTINUED)

*(I have purposely avoided the use of mean values in this citation. The subjects and conditions of the studies from which these data were drawn are so diverse, that any attempt to distill them to mean values would be misleading at best.)*

Methadone is metabolized by the cytochrome P450 system with CYP3A4, and to a lesser extent, CYP2D6 being the main isoforms involved.

### Availability

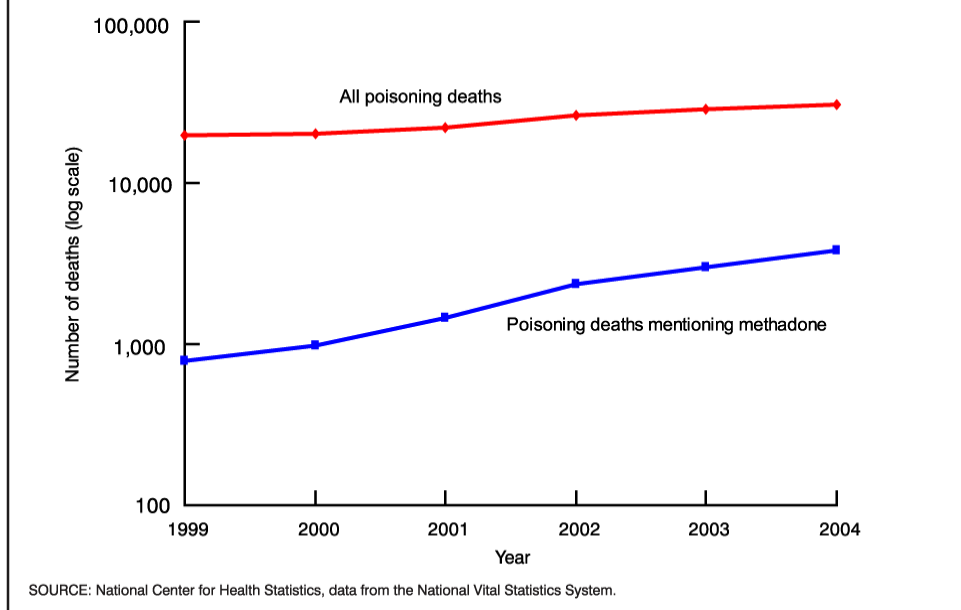
Since the late 90's there has been a marked increase in methadone related fatalities as practitioners seeking alternatives to oxycodone and hydrocodone began to prescribe methadone for pain management. Contributing to the rise in the popularity of methadone as an analgesic is its low price and long half-life. The quantity of methadone being supplied to hospitals, pharmacies and practitioners has increased 350% between 2001 and 2006.

### Deaths

In a study by the U.S. Department of Health and Human Services, National Center for Health Statistics that studied the increase of poisoning deaths, including methadone, between 1999 and 2004, the number of all poisoning deaths increased 54% to 30,308 over the 1999-2004 period, while the number of poisoning deaths mentioning methadone increased 390% to 3,849 (Figure 1). Poisoning deaths mentioning methadone increased from 4% of all poisoning deaths to 13% of all poisoning deaths. Most re-



**Figure 1. Poisoning and methadone-related poisoning deaths: 1999-2004**



cently, all poisoning deaths increased 6% from 2003-04, while those mentioning methadone increased 29%.

Of all narcotics mentioned in poisoning deaths, methadone had the largest relative increases. The relative increase in methadone-related poisoning deaths from 1999

to 2004 was greater than for any individual substance.

### Age

Age specific rates of methadone death are higher for persons age 35-44 and 45-54 years than for those younger or older. This pattern has been true for most of the 1999-

Correction: In the last Drugs in the News (Vol. 32, Issue 3), the graphic at the top of page 13 labeled as ethylene glycol is actually diethylene glycol. We apologize for any confusion this may have caused.

**Please send your interesting contributions for "Drugs In The News" to Section Editor, Dwain Fuller, at Dwain.Fuller@va.gov**

## DRUGS IN THE NEWS (CONTINUED)

2004 period (**Figure 2**). Among those age 55-64 years, the rate in 2004 was seven times the rate in 1999; for those in each of the 10-year age groups covering the span 25-54 years, the rates in 2004 were 3-5 times the rates in 1999. The largest increase, however, is noted for young persons 15-24 years; the rate in 2004 was 11 times that in 1999.

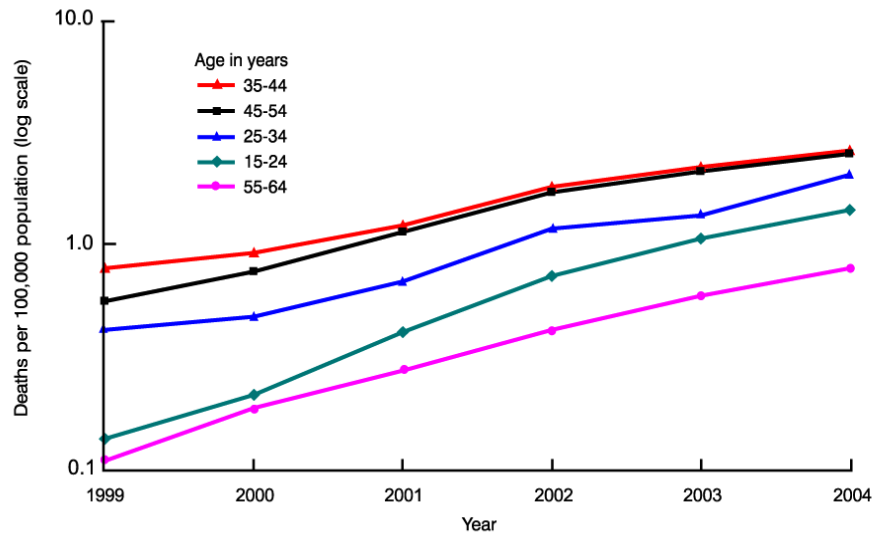
### Regionality

Methadone-related deaths appear to be highly regional in character. The following two graphics are illustrative of this fact:

**Top 10 States with the Highest Percent of Increase in Methadone Poisoning Deaths, 1999-2004**

State	1999	2000	2001	2002	2003	2004	% Increase
WV	4	3	25	52	67	99	2,400
OH	7	14	30	48	62	122	1,650
LA	4	4	19	34	47	64	1,500
KY	8	28	46	72	122	121	1,400
NH	2	7	11	26	32	29	1,350
FL	29	47	117	195	255	400	1,300
OR	5	18	24	60	66	68	1,250
PA	7	17	14	36	67	88	1,150
TN	8	10	14	37	58	99	1,150
WI	6	16	18	34	35	63	950

**Figure 2. Age-specific methadone-related death rates: 1999-2004**



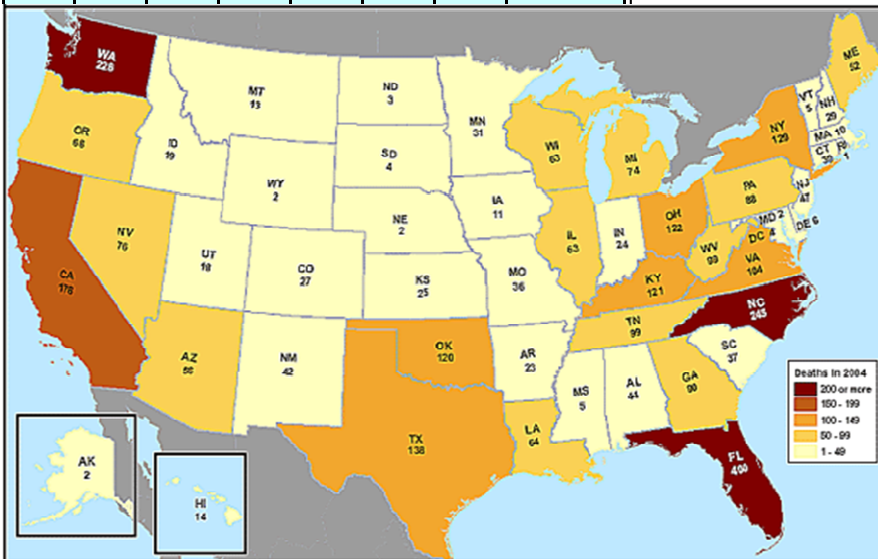
NOTE: Methadone-related deaths were selected regardless of underlying cause of death. SOURCE: National Center for Health Statistics, data from the National Vital Statistics System.

### Potential Causes of Death

There are several factors that contribute to the increase in methadone related deaths. Perhaps the first and most obvious, as mentioned previously, is the increased availability of methadone. Practitioners are at an increasing rate prescribing methadone for pain management, as they look for replacement drugs for, the much-maligned and often abused, oxycodone and hydrocodone. Furthermore, practitioners often wish to exploit the long half-life of methadone for their chronic pain patients, allowing them less frequent dosing, and to help them avoid chronic exposure to high doses of acetaminophen, often compounded with more traditional pain medications. Also weighing heavily in prescribing decisions is the fact that methadone is inexpensive as compared to many of the other pain medications available today.

#### Below: Methadone Related Deaths in 2004

Source: National Center for Health Statistics



A second factor in the increasing death rate is that the pharmacology of methadone can be quite unpredictable. A detailed discussion of the pharmacokinetic variability of methadone was authored by Eap, Buclin, and Baumann in 2002. Among some of the more important factors contributing to this variability are a long Tmax, a long and highly variable half-life, and the effect of co-ingested medications.

Due to the long Tmax of methadone, the respiratory depressing effects

## DRUGS IN THE NEWS (CONTINUED)

of methadone may develop several hours after the last dose, often after the patient has gone to bed, making the loss of respiratory drive even more dangerous.

The half-life of methadone is quite long as compared to most other opioids and its respiratory depressant effects often last much longer than its analgesic effects. Adding to its unpredictability is the fact that studies have indicated that methadone induces CYP3A4 and therefore enhances its own metabolism after a period of use.

Co-ingested medications may also play a role in methadone toxicity. There appears to be a strong correlation between the concomitant use of benzodiazepines and methadone fatality. Caplehorn and Drummer, 2002, postulated that this may be primarily due to the benzodiazepine-induced relaxation of the upper airway, causing airway obstruction which in turn exacerbates the loss of respiratory drive, as previously mentioned.

Beyond the additive effects of co-ingested CNS depressants, many medications have been shown either to induce or inhibit CYP3A4. Inhibition of CYP2D6 has also been indicated by some of the SSRI medications, in particular. This unpredictable induction and/or inhibition of methadone's metabolizing enzymes contributes to its unpredictable half-life.

Yet a third factor is patient compliance, or rather, a lack thereof. Methadone has been found effective as a narcotic replacement medication for opioid addicts primarily for two reasons: Its long half-life allows for infrequent and clinic-controlled dosing and its long T<sub>max</sub> minimizes or eliminates the euphoric effects sought by opioid

abusers. However, it is often this "delayed onset" of analgesia and lack of psychotropic effects that lead patients to overmedicate themselves. Patients who are switched to methadone from oxycodone, hydrocodone, or the like, may feel that their medication is not working, since they may not achieve the analgesia they seek in the time period they have come to expect, therefore they take additional doses. Similarly, those patients seeking or expecting euphoric effects from methadone, may also take additional doses in an attempt to achieve those effects. Additionally, as discussed previously, patients may use other potentially interfering medications, even against medical advice.

Lastly, one cannot ignore the role of "therapeutic misadventure". As one can readily discern from the forgoing discussion, methadone therapy can be quite unpredictable. Many doctors who are not routinely involved in addiction medicine or pain management practices may not adequately understand the difference in the pharmacology of methadone as compared to the more traditional opioid analgesics. This may lead to overprescribing, too rapid an escalation in dosage, or a lack of patient education and proper warnings, especially for new methadone patients.

### Summary

The incidence of methadone-related deaths has grown rapidly over the past 10 to 15 years. High variability in volume of distribution, bioavailability, half-life, and a long T<sub>max</sub> contribute to the difficulties in the management of methadone therapy. Furthermore, drug interactions, causing additive

CNS depression or unpredictable effects on methadone metabolism, as well as poor patient compliance, further obfuscate methadone therapy. Methadone is a powerful tool in the physician's arsenal for use in combating pain or fighting addiction, however, like everything powerful, it must be understood and it must be respected.

### Acknowledgements

A special thanks to Troy Merrick who sent me the article, *Killer or Cure*, by David Hurst.

### References

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## NEW DRUGS - AMBROXOL

Submitted by Jaime Lintemoot and Dan Anderson, Los Angeles County Department of Coroner  
1104 N. Mission Road, Los Angeles, CA 90033

Please send interesting "New Drugs" articles to Section Editor, Dan Anderson  
at danderson@coroner.lacounty.gov

Ambroxol, active ingredient of Mucosolvan® or Mucoanginis®, has local anesthetic properties and is a systemically active mucolytic agent used for decades in the treatment of respiratory disorders associated with excessive mucus, chronic inflamma-

tory pulmonary conditions, bronchitis, and/or pneumonia. The onset of action occurs after 30 minutes when administered orally. The drug works by breaking acid mucopolysaccharide fibers causing the sputum to be thinner and less vis-

cous, therefore more easily removed by coughing. Although Ambroxol has been on the market for numerous years, this was the first encounter our Toxicology Laboratory has had with the drug.

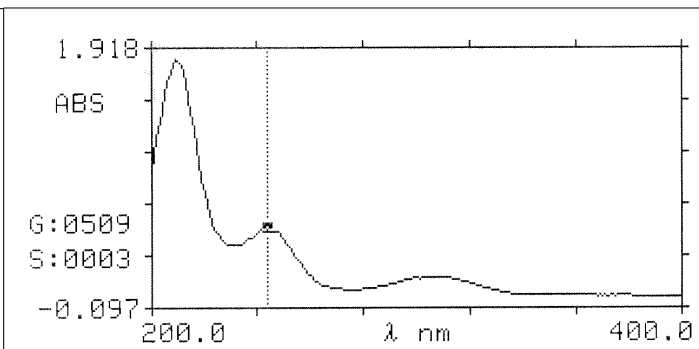
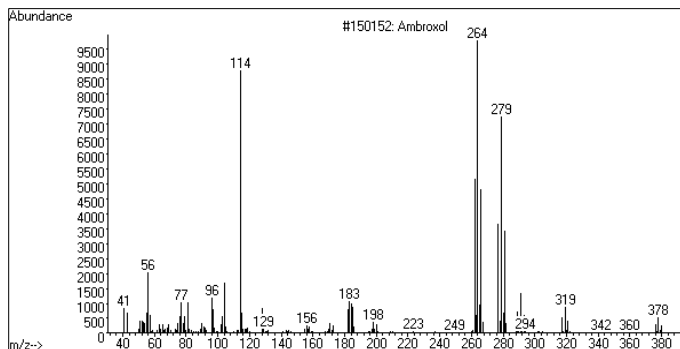
### General Information:

Common Name:	Ambroxol
Trade Names:	Mucosolvan®, Mucoangin®
Chemical Name:	<i>trans</i> -4-(2-Amino-3,5-dibrombenzylamino)-cyclohexanol
Chemical Formula:	C <sub>13</sub> H <sub>18</sub> Br <sub>2</sub> N <sub>2</sub> O
Formula Weight:	414.56 (Ambroxol HCl)
Molecular Weight:	378.10
CAS Number:	18683-91-5
Administration:	Tablets - 30 mg Syrup - 5 ml containing 15 mg
Sigma Aldrich	Catalog No. A9797



### Toxicology:

Extraction:	n-butylchloride basic liquid/liquid drug extraction with an acid back extraction
Detection:	GC/NPD - Linearity (r <sup>2</sup> =0.99) from 0.10-2.0 ug/ml utilizing Carbinoxamine as IS (*method not fully validated) GC/MS - 264, 279, 114, 319, 378 m/z
Elution Order:	Paroxetine, Metoclopramide, <b>AMBROXOL</b> , Fentanyl, Olanzapine
UV-VIS:	Experimentally determined - Molar Absorptivity Coefficient at 244 nm in 0.1 N HCl averaged 255 (10 mg/ml)



### Case Study:

In May 2008, a thirty-five year old female with a recent diagnosis of pneumonia, a history of depression, and a past suicide attempt (18 years ago by Drano® ingestion) was found unresponsive at home and subsequently died upon arrival at the hospital. The au-

topsy results were inconclusive, therefore, the cause and manner of death was deferred for Toxicology. The Toxicology results are represented in the adjacent table. The Medical Examiner determined the cause of death to be Multiple Drug Intoxication with a mode of death as Undetermined.

Drug	Heart Blood (ug/ml)
Dextromethorphan	0.46
Promethazine	0.44
Hydrocodone	0.46
Levorphanol	Present
Ambroxol	*0.44



## AMERICAN BOARD OF FORENSIC TOXICOLOGY (ABFT) NEWS

By Marina Stajic, Ph.D., D-ABFT  
President, ABFT

At the ABFT annual meeting in February 2008, the following Directors were elected to a three-year term:

- Yale Caplan, Ph.D., D-ABFT
- Daniel Isenschmid, Ph.D., D-ABFT
- Joseph Manno, Ph.D., D-ABFT
- Elizabeth Spratt, MS, D-ABFT

The above re-elected and newly elected Directors join the following Directors currently serving their respective terms:

- Frederick W. Fochtman, Ph.D., D-ABFT
- Graham R. Jones, Ph.D., D-ABFT
- Barry K. Logan, Ph.D., D-ABFT
- H. Horton McCurdy, Ph.D., D-ABFT
- J. Rod McCutcheon, B.S., D-ABFT
- Robert J. Osiewicz, Ph.D., D-ABFT
- Theodore F. Shults, J.D., M.S, Public Member

The Board Officers elected in February 2008 to a one-year term are:

- President, Marina Stajic, Ph.D., D-ABFT
- Vice Pres., Bruce Goldberger, Ph.D., D-ABFT
- Secretary, Daniel Isenschmid, Ph.D., D-ABFT
- Treasurer, Robert Middleberg, Ph.D., D-ABFT

It is a great honor and privilege to serve as the fourth President of the ABFT. In its first 33 years of existence, the ABFT had only three presidents: Dr. Kurt Dubowski, Mr. Robert Cravey and Dr. Yale Caplan. Dr. Caplan was elected to the Board in 1984 and, after serving as Secretary/Treasurer, was elected President in 1989. He held this position until June 30, 2008, longer than the combined terms of the first two presidents and, most likely, longer than any other president ever will. President Caplan led the Board to many significant accomplishments. Most notably, the ABFT Laboratory Accreditation Program was developed with the goal to enhance and maintain standards of practice of post mortem forensic toxicology and human performance forensic toxicology; ABFT has been among the first boards to be accredited by The Forensic Specialties Accreditation Board (FSAB), formed in 2000 as an entity to objectively assess, recognize, and monitor various professional boards that certify individual forensic scientists and other forensic specialists; the Forensic Toxicology Specialist certification was established to include toxicologists who have not met educational requirements for Diplomate certification; ABFT certification, originally limited to the United States and Canada, has been extended internationally.

Dr. Caplan retired from the office of President, but graciously agreed to remain a member of the Board. The

Board has traditionally acknowledged outstanding services to the Board by presenting a plaque to the outgoing Director. In Dr. Caplan's case, this plaque was presented while he still serves on the Board, not only to commemorate past distinguished service, but also in anticipation of future invaluable contributions. On behalf of all the Directors – THANK YOU, Yale!

The annual Certificant ceremony and reception was held during the SOFT meeting in Phoenix. Certificants who passed the exam in Phoenix were introduced and certifications were presented to those who recently qualified and re-qualified, as well as to representatives of laboratories accredited by ABFT. There are currently 24 laboratories participating in the ABFT Laboratory Accreditation Program – 23 in the United States and one in Canada.

CONGRATULATION to eighteen toxicologists who have successfully met all the requirements and joined the ranks of ABFT certificants since March 2008:

**Ilene K. Alford, FTS-ABFT**  
**Diane Boland, D-ABFT**  
**Chris W. Chronister, D-ABFT**  
**Timothy C. Fassette, FTS-ABFT**  
**Michele A. Glinn, D-ABFT**  
**Veronica M. Hargrove, FTS-ABFT**  
**William R. Johnson, FTS-ABFT**  
**James C. Kraner, D-ABFT**  
**Carrol R. Nanco, FTS-ABFT**  
**Daniel K. Richardson, FTS-ABFT**  
**Jinee D. Rizzo, D-ABFT**  
**Colleen E. Scarneo, FTS-ABFT**  
**John L. Stevenson, FTS-ABFT**  
**Saeed Touserani, FTS-ABFT**  
**Tara J. Valouch, FTS-ABFT**  
**James H. Watterson, D-ABFT**  
**Carolyn M. Whitney, FTS-ABFT**  
**Donna B. Zittel, FTS-ABFT**

The ABFT Board 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 will no longer be required every five years. Instead, a fee of \$ 100 will be 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.



# TOXICOLOGY - BITS & PIECES

*Submitted by Section Editor, J. Robert Zettl, MPA*

A.A.F.S.  
NEWS

TOXICOLOGY SECTION

A.A.F.S./S.O.F.T.  
JOINT DRUGS &  
DRIVING  
COMMITTEE

NATIONAL SAFETY  
COUNCIL—COMMITTEE ON  
ALCOHOL AND OTHER  
DRUGS

If you are interested in assisting with the February 09 AAFS meeting in Denver, please contact Ken Ferslew (ferslew@mail.etsu.edu) or Phil Kemp (p\_kemp@ocmeokc.state.ok.us).

The theme of this years' AAFS meeting is "Forensic Science: Envisioning and Creating the Future".

The Tox Section will have special sessions on Drugs and Driving and one on Pediatric Toxicology. This year's Tox. Section lectureship will feature Dr. Daniel Piomelli, a prominent Professor of Pharmacology at U-Cal-Irvine. He will focus on the endocannabinoid signaling system. You don't want to miss this.

Adam Negrusz reported that a database CD of all Tox Section abstracts from 1991 to 2008 is now available free of charge to AAFS Tox members.

The AAFS Toxicology Section welcomes new members. Those existing members needing to update their membership to Fellow should see one of the Section Officers.

## 28<sup>TH</sup> SPECIAL EDITION OF JOURNAL OF ANALYTICAL TOXICOLOGY

Serving as the Editor of the JAT Special Edition 2008 was absolutely a wonderful opportunity for professional development, personal growth, and it would not have been possible without the confidence provided by President Christine Moore Ph.D., Tinsley Preston, Julie Weber-Roark, and Bruce Goldberger, Ph.D.

As you read this today, the holiday season is well upon us and I can reflect back and finally say, "Whew, it's over!" What a whirlwind it was, managing and finalizing twenty-nine manuscripts in a little over three-month period. Yes, it was a lot of work, but I loved every minute of it, especially my Spring Break in Cabo San Lucas, Mexico critiquing manuscripts by the pool! (There's a visual - NOT!) All fun aside, the success of this Journal could not be possible without the significant contributions of all the SOFT Authors and the very timely reviews by my wonderful colleagues and friends. Again, I cannot thank you all enough for having the trust in me to represent the SOFT organization as the 2008 Special Edition JAT Editor. Have a great 2009 New Year!

Dan Anderson

The AAFS / SOFT Joint Drugs & Driving Committee will meet again at the AAFS Meeting in Denver, on Wednesday, Feb. 18, 2009, from 12:00 pm—2 pm. The time was changed so the meeting would not conflict with the Borkenstein Award Dinner. The Drugs & Driving Special Session will be on Thursday, February 19, from 8:30 am—12:00 pm, and will feature nine platform presentations. The committee continues to focus on the DUID website project, which is nearing completion.

The Executive Board of the NSC/CAOD met Friday, October 31<sup>st</sup> at this years' SOFT Conference in Phoenix. Current committee officers are: Jerry Landau, Chair; Mack Cowan, Vice Chair; and Laura Liddicoat, Secretary.

The Executive Board announced that **Laurel J. Farrell** 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 16<sup>th</sup> during the AAFS Annual Meeting in Denver.

The recipient of 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 are well aware of Laurel's many contributions and commitment to our organization. She has held several offices within SOFT and spent countless hours behind the scenes at most every meeting doing a host of duties in support of SOFT as well as chairing workshops and presenting.

The next meeting of the NSC Executive Board will be Sunday, February 15<sup>th</sup> and the Full Committee will meet on Monday, February 16<sup>th</sup>. Exact time and location decided later. 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.



## FAREWELLS

**LtCol. John Thomas Cody, Jr. Ph.D.(Ret) D-FTCB**

Long time SOFT member, LtCol. John Thomas Cody Jr. Ph.D. (RET) passed away in October after a three year battle with colon cancer on October 3, 2008 in San Antonio, Texas. He is survived by his daughters Catherine and Elizabeth Claire of San Antonio; a brother Daniel Cody of Atlanta, GA.; two sisters Kathleen Cecil of Livingston, NJ and Lenore Monks of Jackson, PA. John earned a BS in Biology from Iowa Wesleyan College, an MS in Science Education and a PhD in Biochemistry from the University of Iowa. He served in the USAF for over 27 years and was the Consultant to the Air Force Surgeon General on Drug Testing for the majority of those years. John retired as the Commander of the Drug Lab at Brooks City-Base. John was an original officer and co-founder and an active member of the Chromosome 18 Registry & Research Society. John served as Chair of the SOFT MS/MS Guidelines Committee and was a frequent contributor to JAT. He authored several articles on the excretion profile of amphetamines. He was immediate past President of the Forensic Toxicologist Certification Board, Inc. (FTCB) and was chairman of the Forensic Drug Toxicology Examination Committee of the FTCB at the time of his death. His contributions and presence will be sorely missed.

Special thanks to Dr. Leo Dal Cortivo who has made a generous donation to the SOFT ERA fund in memory of Richard Prouty.

**Richard W. Prouty, B.S., D-ABFT**

The following memorial was written by long time friend, Bill Anderson.

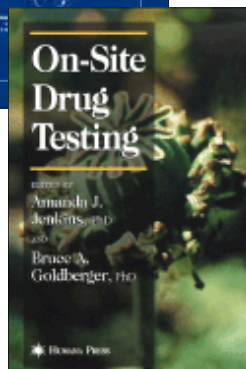
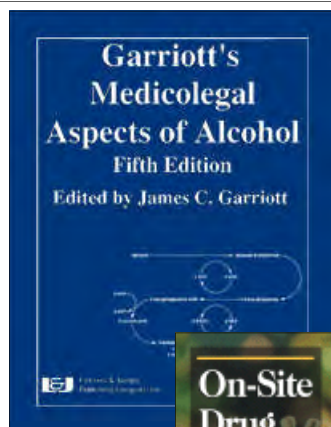
In October of this year a long-standing member of SOFT, Richard W. Prouty, passed away. Dick, as he was known to everyone, was a long-standing member and Past President of SOFT. He obtained his initial training in toxicology while attending Auburn University. After graduation he entered the United States Army and served as a toxicologist while stationed in Japan. After leaving active duty, he attended the University of Maryland in Baltimore. From there, he traveled to North Dakota and assumed the position of State Toxicologist and adjunct professor of Toxicology and Pharmacology at North Dakota State University. He subsequently served as the Chief Toxicologist for the Office of the Chief Medical Examiner for the State of Oklahoma. During his career, Mr. Prouty authored several papers, but he is especially remembered for his pioneering work concerning the post-mortem redistribution of drugs. He actively participated in several professional organizations. He served as President or Section Chair of AAFS, SOFT, and SAT and he was actively involved in ABFT. Dick was an avid sportsman and outdoor enthusiast; he pursued these activities up until his death. He enjoyed people and he never met a stranger. He will be missed by all, but his legacy continues via the many toxicologists that he helped train and mentor.

## NEW BOOKS

**Garriott's Medicolegal Aspects of Alcohol, 5th Edition**, edited by James Garriott

Alcohol related investigation and litigation typically pertains to arrests of drinking drivers, but also includes industrial accidents, public transport accidents, and violent crimes. The medicolegal aspects of alcohol are complex topics because so many different components are present in alcohol-related criminal and civil cases. This 5th Edition provides updated science with specialized expertise and expanded new sections including prosecution and defense of DUI cases.

Available from Lawyers & Judges Publishing @ \$139  
(Casebound 536 pages, 8-1/2"x11",  
Copyright August 2008).

**On Site Drug Testing**, edited by Bruce Goldberger and Amanda Jenkins

Today on-site drug testing is used widely in the workplace, the justice system (probation and parole), hospital emergency rooms, physician offices, and rehabilitation programs. Scientists and forensic toxicologists critically evaluate the on-site devices currently available and share their validation studies. For each device, the expert contributors discuss its principles, materials and reagents, procedures, interpretation, and performance. Sample collection, adulteration, standards, and legal requirements are addressed. This book provides a firm basis for choosing the best test device and technique most suited to their purpose.

Published by Humana Press @ \$115 (Hardcover, 304 pages).

**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., 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**

- 2009:** Oklahoma City, OK.....Oct. 18-23, 2009.....Phil Kemp, Dennis McKinney
- 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.....to be determined.....Bruce Goldberger

Mark you calendars for SOFT 2009 in Oklahoma City, Oklahoma! From October 18<sup>th</sup> through October 23<sup>rd</sup>, the capitol city of Oklahoma will be at your feet, combining the best of scientific environments with the unique and lively entertainment that Oklahoma City is known for. The selected venue for the 2009 annual meeting in Oklahoma City is the Cox Convention Center. The official meeting hotels are the Downtown Renaissance Hotel and the Courtyard by Marriott.

Phil Kemp and Dennis McKinney, our 2009 meeting co-hosts, welcome the SOFT membership to another science packed, fun filled week of special events. Within

a block of the meeting site and hotels is the historic Bricktown district, with shopping and restaurants galore all connected by a mile-long canal. A fleet of water taxis provide a means of seeing the sites. A city trolley also runs through the downtown district connecting popular attractions for \$0.25. In addition, there are horse and buggy rides through the middle of Bricktown.

Oklahoma City is geographically located near the center of our country and easily accessible by auto, air, and Amtrak service. The population of the metro area is 1.1 million. Visitors can expect a mild climate during the week of the SOFT meeting, October 19 – 23, 2009. Temperatures

range from the upper 40's at night to the 60's during the day.

If the old west trips your trigger, then Oklahoma City is the right place for you. The National Cowboy and Western Heritage Museum has one of the most complete collections of Western art in the world. It combines the influences of the American cowboy and Native American cultures to present a fantastic picture of the Oklahoma heritage. Take a stroll around the historic Stockyards City district near downtown that features a variety of shops and eateries.

The SOFT 2009 committee is in full swing planning a great meeting so we look forward to seeing you in Oklahoma City!

The **Renaissance Hotel** is ready to begin accepting reservations. The on-line link is:  
<http://www.marriott.com/hotels/travel/OKCBR?groupCode=socsoca&app=resvlink&fromDate=10/16/09&toDate=10/24/09>

**SOFT 2009 Planning Committee**

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- Dennis McKinney**, Co-Host  
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- John Soper**, Workshop Chair  
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- Jesse Kemp**, Workshop Comm.  
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**2008 S.O.F.T. COMMITTEE CHAIRS**

<u>Committee</u>	<u>Committee Chair</u>
Nominating.....	Diana Wilkins, Ph.D.
Membership.....	Sarah Kerrigan, Ph.D.
Strategic Planning.....	Bradford Hepler, Ph.D., DABFT
Budget, Finance, and Audit.....	Robert Turk, Ph.D., DABFT
ToxTalk Co-Editors.....	Yale Caplan, Ph.D., DABFT Vickie Watts, M.S.
ByLaws.....	Yale Caplan, Ph.D., DABFT
Publications (JAT Special Issue) ....	Dan Anderson, M.S., ABFT
Awards.....	Philip Kemp, Ph.D., DABFT
Drugs & Driving.....	Jennifer Limoges, M.S., DABC
Meeting Resource.....	Anthony Costantino, 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.
Laboratory Guidelines.....	W. Lee Hearn, Ph.D.
Ethics.....	Aaron Jacobs, Ph.D.
Drug Facilitated Rape & Sexual Assault.....	Marc LeBeau, Ph.D.
MS/MS Guidelines.....	Anthony Costantino, Ph.D.

