



SAT Newsletter

News of the Southwestern Association of Toxicologists
Volume 26, Number 1 Spring 2004

Southwestern Association of Toxicologists

2004 Spring Meeting

May 6-8, 2004

College Station, Texas



The Spring 2004 meeting of SAT will be held May 6-8 in College Station. This will be the first time that SAT comes to College Station and we are looking forward to hosting this meeting. The meeting will be held at the College Station Hilton & Conference Center. Hotel information including a map and driving instructions are included in the newsletter.

The focus topic will be on Perceptions. We will have Dr. R Li from Sam Houston State University talk to us the MS program they offer and entering students perspectives of the field. Additionally, we have Toby Dagenhart from our local CBS affiliate present how the news (predominately television) handles reporting events associated with our field. Finally, we are planning to have a defense attorney (still trying to ensure that he is not in court) discuss how they approach expert witnesses.

For those that either love or have to escape the “Fightin Texas Aggies”, we’ll enjoy a nice wine tasting and dinner at our local winery/restaurant “Messina Hof”. We also have plans to tour the Texas Veterinary Medical Diagnostic Laboratory, which is the equivalent to an animal medical examiners office. See you in CS!

Kenneth Peck

k-peck@tvmidl.tamu.edu

(979) 845-9011



College Station Hilton & Conference Center
801 University Dr E
(979) 693-7500

REMEMBER – APRIL 15th is the Hotel Reservation Date

Deadline – April 15th, 2004 Rate – Single/Double \$79.00 Group“SAT” www.hiltoncs.com

From Points West of College Station (Austin San Antonio) - From Texas Highway 21. As you approach Bryan/College Station (After crossing the Brazos River) take Highway 47 (right exit only). Highway 47 will merge with Highway 60 (Raymond Stoltzer Parkway) and you will pass the College Station Airport. Remain on Hwy 60 (Raymond Stoltzer Highway becomes University Drive), you will pass Texas A&M University and cross Texas Ave (Bus 6). Approximately 0.7 miles past University Drive and Texas Avenue, the College Station Hilton will be on your left (Turn on Tarrow St).

From Points North of College Station (Dallas/Ft. Worth) From Texas Highway 6. As you approach Bryan/College Station, remain on the highway (do not take Bus 6). Take the University Drive exit. Turn Right on University Drive. The College Station Hilton will be on your right approximately 1.1 miles.

From Points South of College Station (Houston) From Texas Highway 6. As you approach Bryan/College Station, remain on the highway (do not take Bus 6). Take the University Drive exit. Turn Left on University Drive. The College Station Hilton will be on your right approximately 1.2 miles.

From Points east of College Station (Huntsville). From Hwy 30. As you approach College Station Turn Left on University Dr (Hwy 60). You will cross Texas Highway 6. The College Station Hilton will be on your right approximately 1.2 miles.

Southwestern Association of Toxicologists
2004 Spring Meeting
May 6-8, 2004
College Station, Texas

TENTATIVE MEETING SCHEDULE

Thursday, May 6th

12:00 - 5:00	Board Meeting	(Rm 1122)
3:00 - 5:00	Tour TVMDL and Vet School	
6:00- 7:00	Registration	Mockingbird
6:00 -	Exhibitor Set-up	Mockingbird
7:00- 8:30	Reception Presidents Room	(Rm 1122)

Friday May 7th

8:00 - 9:30	Registration	Mockingbird
8:00 - 8:30	Breakfast	Mockingbird
8:00 - 4:30	Exhibits	Mockingbird
8:30 - 4:30	Meeting (Business meeting 8:30)	Brazos Theater
12:00 - 1:00	Lunch	Oakwood
5:30 - 8:30	Depart to Messina Hof/Dinner	

Saturday, May 8th

8:00 - 8:30	Breakfast	Mockingbird
8:00 - 10:45	Exhibits	Mockingbird
8:30 - 12:00	Meeting	Brazos Theater

Southwestern Association of Toxicologists
2004 Spring Meeting
May 6-8, 2004
College Station Hilton & Conference Center
College Station, Texas

Registration Form:

Name (As it appears on badge): _____

Phone: _____

Email: _____

Title: _____

Agency: _____

Address: _____

SAT Member _____ Non-Member _____

Meeting Registration:

Please register by April 22, 2004 to avoid late fees.

	Member	Non-Member	Student	Total
Prior to April 22 nd	\$75.00	\$85.00	\$45.00	_____
After April 22 nd	\$85.00	\$95.00	\$50.00	_____

Extra Lunch Ticket \$15.00 x _____ _____

Extra Dinner/wine tasting ticket \$30.00 x _____ _____

TOTAL ENCLOSED _____

Please make checks Payable To SAT and mail to:

Kenneth Peck SAT
P.O. Box 2252
College Station, TX 77841-2252
k-peck@tvmdl.tamu.edu (979)-845-9011

Please note that if you are considering attending but not able to register please e-mail so that we can make arrangements for dinner.

HOTEL information:

College Station Hilton & Conference Center
801 University Dr E
College Station, TX 77840-2116
(979) 693-7500

<http://www.hiltoncs.com> Use "SAT" as the group code

Special Rate: Single/Double \$79.00/night + tax

Deadline for this special rate is April 15th

Southwestern Association of Toxicologists

Meeting Grants Application

The SAT Meeting Grant (\$300.00 plus meeting registration) may be awarded to two individuals per meeting (at the approval of the board). It may be applied toward the current meeting or one of the next two meetings.

Guidelines for Meeting Grant:

- SAT Member in good standing.
- Presenting paper at meeting.
- Non-supervisory position.
- Sponsoring letter from laboratory or section manager.

Application for the SAT Meeting Grant should be forwarded to:

Phil Kemp, Ph.D.
Office of Chief Medical Examiner
901 N. Stonewall
Oklahoma City, OK 73117

Phone: 405-239-7141
Fax: 405-239-2430

Email: p_kemp@ocmeokc.state.ok.us

Applicant's

Name: _____

Position: _____

MailingAddress: _____

Phone: _____

Sponsor: _____ Title: _____

NOTE: Title and abstract must be received by program chair prior to application.

Applicant Signature: _____

Date: _____

Date Application received: _____

SAT member verified: _____

Recommendation of committee: _____ Approve _____ Disapprove

Action of Board: _____ Fund _____ Do Not Fund Date: _____

Southwestern Association of Toxicologists
Board of Directors:

President: 2003-2004	Chris Heartsill Dallas County Institute of Forensic Sciences (214) 920-5966 cheartsill@dallascounty.org
President-Elect: 2003-2004	Phil Kemp, Ph.D. Office of Chief Medical Examiner (405) 239-7141 p_kemp@ocmeokc.state.ok.us
Past President: 2003-2004	Mike Frontz Bexar County Forensic Science Center (210) 335-4031 mefron@co.bexar.tx.us
Secretary: 2003-2005	Monica Lopez Dallas County Institute of Forensic Sciences (214) 920-5809 mlopez@dallascounty.org
Treasurer: 2002-2004	Robert G. Schoenfeld, Ph.D. (505) 884-4997 rgs6565@aol.com
Councilor: 2002-2004	Brad Hall, Ph.D. Travis County Medical Examiner Laboratory (512) 854-9861 brad.hall@co.travis.tx.us
Councilor: 2003-2005	John Tarver, MS, MBA, DABFT Accuchem Laboratories, Inc. (469) 330-3013 tarverhome@panaband.com jtarver@accuchemlabs.com

President's Message

If I had to name this section I would call it Toxicology Scatter-shooting. So many developments over the past several years have changed forensic science and forensic toxicology that it almost makes your head spin. From television shows like CSI, Forensic Files, and The New Detectives, to Accreditation, to the 500 new drugs a year the pharmaceutical companies are developing, it is tough to keep track of it all.

The legal system is becoming more dependent upon accurate and quality results, qualified personnel, and accredited laboratories. The laboratories are becoming more dependent upon reliable instrumentation, conscientious personnel, and qualified leadership. The personnel in the laboratories are (and have always been) dependant upon organizations such as The American Academy of Forensic Science, Society of Forensic Toxicologists, and the Southwestern Association of Toxicologists, just to name a few.

You ask: "What does all of this mean?" Well, after explaining that our job is nothing like CSI, that we are (or are at least thinking about becoming) accredited, and that we can or cannot detect a certain compound, it means just what it did many years ago. We, as toxicologists, must take the information gained by our analysis and interpret it. The interpretation must come from education and experience. Much of the education and experience comes from organizations such as SAT and the relationships that are built within such organizations. That is where this is all leading.

The ability to interpret our results comes from the hard work of many people done over many years. While we can go into court and prove that our result is accurate within a degree of certainty, the interpretation comes from the accumulation of knowledge gathered from many different sources. Twice a year the members of SAT get together and share their knowledge. I, as many of you, have learned a great deal from the members of SAT. I would encourage you to continue to support SAT and share some of your knowledge at the upcoming meetings (there is a lot more that I need to learn).

I hope that I will have the opportunity to see you in College Station and welcome home all of you Aggies.

Chris Heartsill

President – Southwestern Association of Toxicologists, 2003-2004

POINTS OF REFERENCE

1. To submit information, newsletter articles, want ads, or answers and discussion for the current Toxicology Exchange Topic:

Nancy Gowen
Genzyme Glycobiology Research Institute
800 Research Parkway, Suite 200
OKC, OK 73104

(405) 271-8184
Nancy.Gowen@Genzyme.com

2. Web page address: <http://www.sat-tox.org/>
Web page email: webmaster@sat-tox.org
Web Page administrator:

Glenn Harrison
TX Dept of Public Safety
PO Box 4143, MSC0460
Austin, TX 78765

(512) 424-2105(ph)
(512) 424-2869(fax)
glenn.harrison@txdps.state.tx.us

3. To Update addresses, phone numbers, employment, and email addresses for member records:

Monica Lopez
Dallas Co. Institute of Forensic Sciences
5230 Medical Center Drive
Dallas, TX 75235
mlopez@dallascounty.org

(214) 920-5809

-Change of address form-

Name: _____				
Last	First	Middle		
Home Address: _____				
Street	City	State	Zip	
Firm Name: _____				
Title: _____				
Address: _____				

Business Phone: _____			FAX: _____	
Home Phone: _____			email: _____	

4. To post a message to the e-mail list, send your message to sat-tox@yahoogroups.com.

5. To subscribe to the list server, choose one of the following:

- a. Web-method (preferred): The email list has its own website, which is www.groups.yahoo.com/group/sat-tox. If you go to this website, you will be prompted to either convert your existing status with the old list from e-groups to a Yahoo! Account, or you can simply go through the join process if you are not currently a member or if you are not sure.
- b. Email only method: Send a blank email to sat-tox-subscribe@yahoogroups.com.

6. To view the e-mail list server website, go to www.groups.yahoo.com/group/sat-tox and log in using your Yahoo! Account username and password. You will be able to view and retrieve archived list messages, other files, polls, and databases. You will also be able to upload information such as unknown spectra that you wish for other members to view.

ACKNOWLEDGEMENTS

This newsletter is published biannually for the benefit of the members of the Southwestern Association of Toxicologists.

The publishing of this newsletter was made possible with the help of the following: Rod McCutcheon, Kathy Erwin, Ken Peck, Glenn Harrison, and Chris Heartsill.

Nancy Gowen (editor)

SAT Business Meeting

Austin Hilton North

Austin, Texas

November 7, 2003

Minutes taken by Kathy J. Erwin (substituting for Secretary Monica Lopez)

I. Call to Order and Welcome

President Chris Heartsill called the meeting to order at 8:35 AM on November 7, 2003. He welcomed everyone to the Austin meeting and introduced our host, Rod McCutcheon. Rod welcomed everybody to the meeting, asked that we visit and support our vendors, and mentioned that we should bring our driver's license along for the Coupland outing.

II. Reports of Officers

A. Secretary's Report

Kathy Erwin filled in for Monica Lopez, who could not be present due to illness. Rod McCutcheon made a motion to accept the minutes from the Albuquerque meeting as published in the newsletter. It was seconded and approved. Kathy Erwin reported that the directory on the Yahoo website was updated in July with new members added and a few address corrections made.

B. Treasurer's Report

Treasurer Robert Schoenfeld presented his report. As of October 24, 2003, our total net worth is \$26,769.61 with the Bank Book Balance at \$8,662.01 and the Fidelity Funds Balance at \$18,107.60. The Fidelity Fund is our educational fund; our meeting grants come from this fund. John Tarver made a motion that we accept the treasurer's report. Lori Speaker seconded the motion, and it was approved.

III. Committee Reports

A. Meeting Grants

Phil Kemp reported that Kim Fox, Regional Forensic Science Center in Wichita, is the awardee for this meeting. She will be presenting a paper on "A Case Study: Drug Facilitated Sexual Assault with Multiple Benzodiazepines." Two new changes regarding the meeting grants are: 1) there will be a deadline 1 month ahead of the meeting time (this will allow checks to be ready at the time of the meeting) and 2) awardees will have choice of receiving a \$300 check or a Palm Pilot. The deadline for meeting grant applications for the College Station meeting is April 6th.

B. Membership

Councilor Brad Hall presented the report. Brenda Snodgrass and the two councilors, John Tarver and Brad Hall, who make up the Membership Committee, recommended that the board present the following three applicants to the general membership for approval. They are:

Joanna Johnson, United Chemical Technologies, Bristol, PA
Ronald Tisdell, Toxicology Litigation Consultants, Temple, TX
Jeffery Wise, Sam Houston State University, Houston, TX

Bob Schoenfeld moved that we accept all applicants for membership. It was seconded and approved.

C. Communication Committee

Glenn Harrison presented the report. He said that we still have e-mails coming in to the web site, which he tries to answer in a generic fashion. Ken Peck made a suggestion that a disclaimer be put on our abstracts (might be able to use the copyright symbol). There was some discussion about this topic. Mike Frontz made the point that the PowerPoint presentations on the Yahoo Groups site are accessible only to members and are not searchable by Google. Glenn Harrison suggested that maybe we should review abstracts from previous meetings that are on the web site.

D. Awards Committee

Normally at the Fall Meeting the Charles Tripp Award is presented. Due to an oversight by the current President, that plaque was not made. We do have an awardee, so that presentation will be made in the spring. The Past-President's Award was presented to Mike Frontz.

IV. Old Business

A. New Member Sponsorship

Ashraf Mozayani was awarded the New Member Sponsorship Award for this past year.

B. Electronic Newsletter

We are currently sending out our newsletter in a printed copy by mail. We want to move into solely an electronic format. It will be cheaper and easier for the organization. Ken Peck made a motion that members without internet access be allowed to request a print copy of the newsletter by sending a written request to the secretary. A postcard notice will be sent out to announce the change. After some discussion, Mike Frontz made a motion to eliminate the print version of the newsletter and move to an electronic version, allow a print copy by request to those without internet access, and to notify members of the change by letter or postcard. Ken Peck withdrew his earlier motion. Paola Merritt seconded Mike Frontz's motion. The motion carried with one nay vote.

C. Officer Responsibilities

Lori Speaker is making a list of what each officer's responsibilities are. She'll hand out this outline to each officer for his or her review, and then will finish up this project.

D. Knit Shirts

Mike Frontz will be taking orders for knit shirts with the SAT logo on them. The shirt will be navy with a gold logo. These will be available at the College Station Meeting. The price will be about \$15.00.

V. **New Business**

A. Future Meetings

A tentative future meeting schedule is as follows:

1. Spring 2004 - Ken Peck, College Station, TX. The meeting will be held at the College Station Hilton & Conference Center May 6-8. An evening meal and wine tasting will be at the Messina Hof Winery. A tour of the Texas Veterinary Medical Diagnostic Laboratory and the Vet School is planned. Ken Peck had brochures about the winery and a flier describing the meeting available.
2. Fall 2004 – Phil Kemp, Oklahoma City. Meeting is in the preliminary stages of planning. Dates will be Nov. 4-6. Theme will be “Where We’ve Been and Where We’re Going.”
3. Spring 2005 - Dallas/Fort Worth (tentative)
4. Fall 2005 - San Antonio (tentative)
5. Spring 2006 - Houston (tentative)
6. Fall 2006 - Austin (meeting with SOFT). Rod McCutcheon is working on obtaining the SOFT registration rate for SAT members. The meeting itself is Tuesday through Saturday.

B. Vendor Liaison

Chris Heartsill recognized Paola Merritt, our vendor liaison. She has done a wonderful job. She has been a big help to the vendors.

C. Officer Nominations

Chris Heartsill opened the floor for nominations. Nominations from the board are:

President-Elect (2004-2005)	Brad Hall
Treasurer (2004-2006)	Kathy Erwin
Councilor (2004-2006)	Elizabeth Zbranek-Taylor and Don Riddle

No further nominations were made from the floor. Rod McCutcheon moved that the nominations be closed. It was seconded and approved.

D. Award Question

Rod McCutcheon asked if anybody remembered an award given by SAT for “Outstanding Member of the Year” or “SAT Annual Appreciation Award”. It would have been in 1995 in Houston (maybe). Becky Elledge was President and Tim Rohrig was Secretary at the time. Neither of them remembered any such award. Ken Peck said there used to be an award like that some time ago.

VI. **Adjournment**

A motion to adjourn the meeting was made by Phil Kemp, seconded, and approved.



Clandestine Methamphetamine Laboratories and Toxicology

Lori Speaker

Criminalist, Controlled Substances

Texas Department of Public Safety – Waco Laboratory

Clandestine methamphetamine laboratories, or clan labs for short, have existed for decades and have also undergone many changes in the way methamphetamine is produced. Multiple hazards are associated with these clan labs and the likelihood of toxic exposures exists at every scene. Points of discussion will include types of labs and chemical hazards present as well as how the risk of toxic exposure is being handled by local law enforcement and laboratory response teams.

Fencamfamine in a Postmortem Case

Terry Danielson, Ashraf Mozayani and Kelsie Simons, Harris County Medical Examiner, J.A.J. Forensic Center, Houston, Texas, 77054

Fencamfamine (figure 1) is a sympathomimetic amine with structural and biochemical similarities to amphetamine and cocaine. It is not available by prescription and has been deemed a prohibited substance by most athletic unions. In rodent models, fencamfamine produces central nervous system stimulation and, in humans, is claimed to increase drive, mental alertness, and feelings of well-being. There are also reports that a combination of fencamfamine and a local anesthetic would be very difficult to distinguish from cocaine.

We have encountered a drug-related fatality in which small amounts of fencamfamine were detected. Death in this 51-year-old female was attributed to the combined presence in blood of hydrocodone (0.62 mg/L), alprazolam (0.2 mg/L) and sertraline (0.32 mg/L). Fencamfamine was isolated from post-mortem specimens by liquid / liquid extraction at a basic pH. Separations were achieved on a DB-5 capillary column (12 m, 0.23 mm id). The carrier gas (He) flow rate was 1.2 mL/min. The initial oven temperature was 50°C, rising after 1 min to 100°C (50°C /min) and held for 1 min. Oven temperature was then increased at 20°C/min to 285°C and maintained for 7 minutes. Total run time was 19.3 minutes. Under these conditions, the retention times of fencamfamine and SKF-525A were 7.2 and 10.5 minutes, respectively. Major ions in the mass spectrum of fencamfamine appeared at m/z 215 (100%) 98, 84 and 58. Levels of fencamfamine were 0.03 mg/L in blood, 0.44 mg/kg in liver, 0.02 mg/L in bile and 0.5 mg/L in urine.

In spite of the notoriety associated with fencamfamine this appears to be the first report in the readily available literature of its presence in a forensic case.

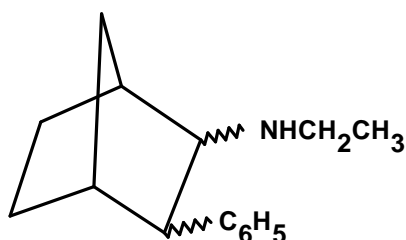


Figure 1: Fencamfamine

Improving Blood Alcohol Concentration (BAC) Testing and Reporting in Texas

Becky T. Davies, Research Scientist
Center for Transportation Safety, TTI

In 2001, an estimated 1,789 persons died in alcohol-related motor vehicle crashes in Texas. Yet, the lack of reliable data on alcohol and other drugs found in drivers involved in fatal crashes presents a serious obstacle to adequately addressing this impaired driving problem. The rate of reporting BACs for drivers killed in traffic crashes in Texas has fallen from 62% in 1991 to 33% in 2001. Unfortunately, Medical Examiners and Justices of the Peace may be unaware of their statutory obligation to report this information to DPS. In addition, law enforcement officers often fail to document BAC test results on the accident report forms sent to DPS.

The collection and analysis of accurate, comprehensive data is important for formulating public policy, initiating legislative reform, allocating funds for DWI enforcement efforts, and evaluating the effectiveness of countermeasures to combat impaired driving. Reliable data allow traffic safety professionals to identify high-risk groups to be targeted for intervention programs, establish baseline numbers against which countermeasure successes can be measured, and determine changes in the incidence of impaired driving over time. In the absence of reliable data, invalid policy and legislative decisions may be made, and ineffective, financially wasteful countermeasures may be sustained indefinitely.

Drug Facilitated Sexual Assault with Multiple Benzodiazepines

Kim Fox, and Timothy Rohrig Ph.D.

Sedgwick County Regional Forensic Science Center

1109 North Minneapolis

Wichita, KS 67214

The use of intoxicating substances to render a victim more susceptible to a sexual assault is not an uncommon practice. The major change over time for Drug Facilitated Sexual Assault (DFSA) is the agent utilized. Benzodiazepines like Alprazolam and Clonazepam are becoming more popular because they are very potent, thus requiring only a low dose. These drugs exhibit a short duration of action. Yet another property of these drugs is anterograde amnesia, which causes a “memory erasure” from the onset of action until many hours later. In the present case, two victims recall eating “offered food” in a restaurant and shortly thereafter the doors being locked. Both victims claim a “loss of time” that they cannot remember, and believe to have been assaulted. They reported to a local hospital for a sexual assault examination, and urine samples were submitted to this office for testing. Toxicological testing revealed the presence of 7-aminoclonazepam and α -hydroxyalprazolam (accompanied by parent Alprazolam) in the urine of both victims. These findings are consistent with side effects associated with the two benzodiazepines.

Effective Testimony, 5 key points

Sol Bobst, Ningjia Zheng, and Ben Thomas

Ceratox Consulting & Risk Assessment & Management (RAM), Inc.,
Houston, Texas

Requirements for testifying health experts changed dramatically with court decisions like *Daubert vs. Merrill Dow*. The judge is now responsible for determining whether the expert's opinion is technically sound and worthy of jury time. Being a doctor who simply states his professional opinion is unacceptable. The testimony of such a witness will likely be disqualified by the judge. In order for an opinion to be considered credible, a testifying expert must reach a conclusion through a logical process that is consistent with practice in the profession. Case law cites the Bradford-Hill criteria as guidelines for reaching the conclusion that exposure to a particular toxicant causes a particular effect. These criteria were proposed to address questions of "general causation" (i.e., does cigarette smoke cause lung cancer?). Toxicologists in most toxic tort cases must deal with the question of "specific causation" (i.e., did the plaintiff's exposure to cigarette smoke cause his lung cancer). Here we present five questions a testifying toxicologist can use to reach and support his technical opinion. These questions form a logical thought process that is easily understood by the judge and jury, and provide a simple basis for explaining why the relevant evidence leads to the toxicologist's conclusions.

How Much Alcohol is in Your Brew?

Janet Meisenheimer, Texas Alcohol Beverage Commission, Austin, TX

No abstract submitted

Pharmacokinetics of R and S Carprofen in Donkeys and Horses

KE Peck, NS Matthews, KL Mealey, M Sinclair, TS Taylor.

Texas A&M University

Texas Veterinary Medical Diagnostic Laboratory

Pharmacokinetics of phenylbutazone and flunixin are different in donkeys than in horses. Carprofen is used in the UK but the kinetics have not been reported. The objective of this study was to compare serum disposition of R(-) and S(+) enantiomers of carprofen after IV administration of a racemic mixture to donkeys and horses. Carprofen is highly protein bound and recovery of the individual isomers differed when extracted under acidic conditions. Recovery of both isomers was increased and equalized when plasma samples were heated after the addition of 0.1N NaOH prior to acidic extraction. Separation of isomers was achieved on a 3,5-dinitrobenzoic acid derivative of R-1-naphthylglycine column.

Five donkeys and 3 horses were used. Blood samples were collected before and at 5, 10, 15, 20, 30, 45 min, 1, 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10, 24, 28, 32, and 48 hours after IV administration of 0.7 mg/kg racemic carprofen. Plasma concentrations of R and S carprofen were determined in triplicate using HPLC. Non-compartmental analysis of the data was performed using statistical moment theory.

In horses, mean area under the curve (AUC; hr x mg/ml) for R carprofen was 83 (SD 6) and 23 (SD 11) for S carprofen. Mean residence time (MRT; hr) for R carprofen was 24 (SD 5) and 18 (SD 13) for S carprofen. Clearance (CL; ml/kg/hr) for R carprofen was 8.4 (SD 0.6) and 37 (SD 18) for S carprofen while volume of distribution (V_{dss}; ml/kg) for R carprofen was 201 (SD 30) and 517 (SD 209) for S carprofen in horses.

In donkeys, AUC for R carprofen was 266 (SD 48) while S carprofen was 149 (SD 31). MRT for R carprofen was 70 (SD 20) and 46 (SD 11) for S carprofen. CL for R carprofen was 2.8 (SD 0.5) and 4.9 (SD 1) for S carprofen. V_{dss} for R carprofen was 183 (SD 20) and 214 (SD 18) for S carprofen in donkeys.

In contrast to phenylbutazone and flunixin, donkeys appear to metabolize this non-steroidal anti-inflammatory more slowly than horses do. Therefore, donkeys may require a longer dosing interval for carprofen than horses do.

Applications of Triple Quadrupole LC/MS/MS in a Forensic Toxicology Laboratory

Brad Hall, Ph.D., DABFT

Travis County Medical Examiner's Office, Austin, Texas

Liquid chromatography/mass spectrometry (LC/MS) is a powerful analytical tool that is becoming increasingly popular in forensic toxicology laboratories. Substances that are thermally labile in the GC/MS are typically easy to measure on the LC/MS. In addition, GC/MS methods and extractions may be considerably simplified and/or enhanced by moving the analysis to LC/MS. In our laboratory we utilize triple quadrupole LC/MS/MS for a variety of targeted analyses including benzodiazepines, quetiapine, Δ^9 -tetrahydrocannabinol, gabapentin, and many others. Analytical methodology for several of the applications we perform in our laboratory will be presented. An overview of theory surrounding LC/MS will be discussed including electrospray ionization (ESI), which is one of the atmospheric ionization techniques used to transport ions from the LC effluent into the mass spectrometer. A good understanding of theory and concerns will help to apply successful methodologies for routine toxicological analysis.

The Ten Things You Can Do To Fix Your Three Most Common Problems

Gary Brook

Full Spectrum Analytics

The three most common GC problems:

- 1) High Background
- 2) Poor Chromatography
- 3) Low Sensitivity

The ten things you can do to fix them:

- 1) Check for air leaks
- 2) Replace injection port septum daily
- 3) Replace injection port liner more often
- 4) Replace gold seal
- 5) Clip column or replace guard column
- 6) Clean ion source
- 7) Monitor Standard Spectrum Autotune
- 8) Tighten or replace column ferrules
- 9) Check flows and operating parameters
- 10) Use instrument logbook

These topics will be present along with example chromatograms, tune reports and dirty consumables.

A Comparison of Two Commonly Employed Methods for the Detection of Ethanol in Biological Specimens

Chris Heartsill, Monica Lopez, and Elizabeth Todd Ph.D.
Dallas County Institute of Forensic Science, Dallas, Texas

Ethanol is one of the most used and abused drugs in society therefore it is one of the most studied drugs that we encounter. However, it is still one of the most litigious drugs that we report. From death investigation to driving while intoxicated to violent crimes ethanol plays a large role. Challenges in the courtroom include interpretation of the results, extrapolation of the results, chain-of-custody, and the analysis of ethanol. There are many different ways to analyze ethanol and other volatiles in biological specimens. The most common way is gas chromatography and there are many differences in the methodologies used in gas chromatography. From Headspace analysis to direct injection, salting out to simple dilution, there are a variety of choices a laboratory has for the analysis of ethanol.

This presentation will compare two methodologies for the quantitation of ethanol in biological specimens using headspace gas chromatography. Our laboratory uses a simple dilution method with a 16-fold dilution. This produces an essentially aqueous solution and allows for the use of aqueous controls and standards, which are widely available. This dilution also reduces the matrix affect produced by the different types of samples found in a toxicology laboratory. This method will be compared to another widely used method of using a salt to increase the partitioning of the volatile compounds into the headspace. Different types of specimens including muscle tissues, decomposed blood, postmortem blood, antemortem blood, blood from burn victims, and urine will be discussed.

The Toxicologist's Role in the Texas Court System Overview of 2003

James M. Burris

Criminalist, Toxicology Section, Texas Dept. of Public Safety, Austin, TX

Courtroom Testimony Techniques have evolved over the years and are an important part of the Toxicologist's responsibility. Brief highlights of important techniques will be discussed as well as two Motions-for-Discovery and cross-examination questions experienced by our Toxicologists in 2003. Some new Motions-for-Discovery challenges have been issued by the Texas Court System, which may give us opportunity to improve the Quality of our Protocols. Example answers to cross-examination questions will be mentioned and intended for continuing education of our members when in the courtroom environment. Also, the new Texas DWI Laws which were effective Sept. 1st, 2003 will be addressed and how they will affect us as an expert witness.

Pharmacokinetic Calculations in a Fatal Bupropion Overdose

J. Rod McCutcheon

Travis County Medical Examiners Office

P.O. Box 1748

Austin, Texas 78767

Rod.Mccutcheon@co.travis.tx.us

Bupropion is an atypical monocyclic antidepressant in the aminoketone class. It has been available by prescription in the USA since 1990 and is sold under the trade names Wellbutrin, Zyban and generically. The Zyban formulation is used as an aid in cessation of smoking.

A fourteen year old male was admitted to the hospital after telling his mother he was not feeling well. He presented to the emergency department (ED) with seizure activity. He received a dose of Valium in the ED at 10:40 AM and remained seizure free until 1:45 PM when he had another seizure. He was dosed again with Valium in the ED and then transferred to pediatric intensive care (PIC). Over the next four hours in the PIC, he had multiple seizures and began experiencing epileptic convulsions at 6:00 PM. He was dosed with Valium and lorazepam in the PIC. He lost consciousness, went into respiratory arrest and died of anoxic encephalopathy two days later.

Toxicological analysis of femoral blood taken at the time of admission showed bupropion and hydroxy-bupropion at concentration of 380 ng/mL and 760 ng/mL, respectively. Analysis of hospital blood taken approximately eight hours later showed concentrations of 1100 ng/mL (bupropion) and 1030 ng/mL (hydroxy-bupropion). Assays of drugs given therapeutically were also performed.

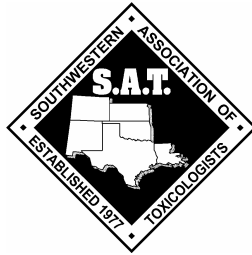
Investigation of the course of events in the PIC indicated some of the medications administered to control seizure activity had been tampered with. A discussion of the potential use of the pharmacokinetic parameters of bupropion, diazepam and lorazepam to determine how much drug was ingested or administered will be discussed.

So You Have a Number
Gary Wimbish, Ph.D.
Forensic Toxicology Consultants, Milford, Texas

No abstract submitted

SOUTHWESTERN ASSOCIATION OF TOXICOLOGISTS

Charles Tripp Appreciation Award



Nomination Form

Candidates Name: _____

Organization: _____

Position: _____

Years of SAT membership: _____

Please detail in the space below the contributions the above candidate has made in the field of Toxicology and in service to the Southwestern Association of Toxicology:

The Board of the Southwestern Association of Toxicologists has established the Charles Tripp Appreciation Award to honor at least one member a year (at the discretion of the board) for outstanding service. Consider the following criteria:

- a. Professional contributions to the field of Toxicology
- b. Contributions and Service to SAT
- c. Years of membership
- d. "Coming through in a Pinch"

Any member can submit the name of a deserving member to the board using the form above.

PROFESSIONAL EXPERIENCE

Employer (most recent first)	City, State	Job Title	Dates		Supervisor
			From	To	

ACHIEVEMENT AND DISTINCTION

Please list any publications, patents, certifications, honors or awards, etc. (attach extra sheets if necessary): _____

I certify that the above information is correct to the best of my knowledge.

Applicant's Signature

Date

SPONSOR #1

SPONSOR #2

Name (please print): _____ Name: _____

Signature: _____ Signature: _____

Phone: _____ Phone: _____

E-mail: _____ E-mail: _____

S.A.T. member: Yes No S.A.T. member: Yes No

Additional Instructions:

If the applicant does not know two full members of S.A.T., the sponsors should be professional references. For those applicants, please include your curriculum vita along with this application. All applications are submitted to the Board of Directors at each semi-annual meeting (April and November). Pending acceptance, dues will begin with the next fiscal year (July).

Mail completed applications along with the non-refundable \$30 application fee to:

Brenda Snodgrass
S.A.T. Membership Committee Chair
519 Fleetwood Dr.
Norman, OK 73072